THE ENGINEERING AND MINING JOURNAL AND COAL

(Published Every Saturday at 253 Broadway, New York.)
Entered at the Post-Office of New York, N. Y., as Second Class Mail Matter.

VOL. LXXI. MAY 18, 1901. No. 20.

THE SCIENTIFIC PUBLISHING CO., Publishers.
ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.
FREDERICK HOBART, Associate Editor.

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Main Office: 253 Broadway (P. O. Box 1833), NEW YORK.

Telephone Number, 3,095 Cortlandt.

New York Cable Address—"ROTHWELL." (Use McNeill's or A B C 4th Edition Code.
London Cable Address—"PULCINETTO." " " " "

Branch Offices:
Chicago, Ill 737 Monadnock Building, Phone 73 Harrison.
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English subscriptions to the JOURNAL may be paid at the London Office at the rate of $7 = £1 8s. 9d.; the publications of the Scientific Publishing Company may be bought at the rate of 4s. 2d. to the dollar, net.

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Reports of consolidations of steel and iron plants, to work in opposition to the United States Steel Corporation, continue to be circulated. This is to be expected, and such rumors will multiply as time goes on. At present they are to be accepted with much reserve, especially as the sources from which most of them come indicate that they are intended for stock market consumption. Competition with the big steel trust is not impossible, but it will be organized in a different way from that pointed out by the present reports.

The British coal trade continues to be excited over the new export tax on coal to a degree which appears to us beyond all reason. Of course no one relishes the imposition of a new tax, and to protest against it is only human nature; but to claim that a tax of 24 cents a ton is going to destroy Great Britain's foreign trade and turn all its customers over to the United States—as some of the trade organs assert—looks rather too much like pure "bluff." It has not, apparently, had any effect on the Government, nor on Parliament. The threat of a general strike of coal miners also failed to have any influence, and the proposed strike was wisely voted down by the representatives of the miners' unions. The fact is that the coal operators and miners have had two or three years of unprecedented prosperity and high wages, and it seems only fair that they should bear their share of the war burden which is troubling Great Britain just now. This is especially the case, as the demand for coal for transports and other purposes resulting directly from the war helped materially in keeping up coal prices. Our British friends will have to pay the tax; and we fear that it will not result in transferring all their foreign trade to American coal operators, either. In fact, our hopes in that direction are very moderate, at least so far as the effect of the tax is concerned.

The stocks of Lake Superior ore reported on Lake Erie docks on May 1st, when account is usually taken, amounted this year to 3,050,183 long tons, and were the largest reported since 1898. On May 1st, 1900, they were only 1,720,655 tons. The accumulation of ore reflects the slackening in furnace activity toward the close of last year; and also the fact that most furnaces using Lake ore laid in large stocks during the navigation season. The following statement shows the movement to furnaces through Lake Erie ports during the years ending April 30th, 1900 and 1901, in long tons:

	1899-1900.	1900-1901.	Changes.
Stocks on Lake Erie docks, May 1.....	2,073,254	1,720,656	D. 352,598
Receipts for the season.....	15,222,187	15,797,787	I. 575,600
Total	17,295,441	17,518,443	I. 223,002
Stocks on docks April 30.....	1,720,656	3,050,183	I. 1,329,527
Shipments to furnaces.....	15,574,785	14,468,260	D. 1,106,525

As the stocks reported on docks on December 1st, 1900, at the close of navigation, were 5,904,670 tons, and these had been reduced by May 1st to 3,050,183 tons, the winter movement to furnaces amounted to 2,854,487 tons. The remaining shipments—11,613,773 tons—were made between May 1st and December 1st, 1900; much of the ore going almost directly from boats to cars.

We have heretofore referred to the much closer saving of anthracite coal which has been the rule in recent years, and the consequently larger proportion of the small or steam sizes which are produced at the collieries. It is not possible to obtain statistics from all the companies, but we have two reports which give full data, that of the Lehigh Coal & Navigation Company and that of the Engineer of the Girard Estate. The latter is especially valuable as an indication, since it covers several large collieries operated by different companies. The two reports give the proportion of small coal produced in 1900 as follows:

	Per cent. of Total. Lehigh C. & N.	Girard Estate.
Large sizes, chestnut and above.....	49.20	57.41
Pea coal.....	14.13	13.98
Buckwheat	16.34	21.10
Buckwheat No. 2, or rice.....	20.33	7.51
Total small, or steam sizes.....	50.80	42.59
Totals	100.00	100.00

In 1895 the Girard Estate collieries turned out 70.95 per cent. of the large or market sizes, and 29.05 per cent. of the small or steam sizes; in 1890 the output was 79.37 per cent. of the large sizes and 20.63 per cent. of steam coal.

The proportion shown by the Lehigh Navigation breakers is unusually large, and that of the Girard collieries is probably much nearer the general average. Accepting this, we find that over 40 per cent. of the anthracite now shipped is coal which not many years ago would have gone into the waste heaps. Some of the fine coal now shipped is, in fact, obtained by washing over the old culm piles.

There is a considerable difference shown in the two reports between the proportion of coal used in operating, that consumed at the Girard

Estate collieries being nearly twice as great as in the Lehigh Navigation mines. The statement from the two reports is as follows:

	Lehigh C. & N.		Girard Estate.	
	Tons.	Per ct.	Tons.	Per ct.
Shipments and local sales	1,951,527	93.0	1,092,357	86.1
Consumed in operating collieries	147,363	7.0	177,087	13.9
Total mined	2,098,890	100.0	1,269,444	100.0

It is difficult to say whether the differences shown above resulted from local circumstances entirely. It is possible that some of it may have been due to differences in methods of accounting and estimating coal used.

SOME NEW PHASES IN THE TRUST QUESTION.

Mr. John Norris, business manager of the New York "Times" in testifying before the Industrial Commission at Washington on April 12th with respect to the industrial effect of corporate consolidations, or trusts, brought to light some new experience. One of the strongest claims in favor of industrial consolidations on the part of their promoters has been the economies in general expense that would be effected by bringing under one management a large number of previously independent concerns, each of which had naturally to maintain its own executive staff, corps of salesmen, etc. It was claimed that the capitalization of the additional profit it was possible to realize by effecting such economies was a perfectly legitimate remuneration of the promoters, and that the cost to the consumer of the articles manufactured would certainly not be increased and might even be reduced. This claim has been brought forward prominently in all the recent industrial consolidations and apparently was a perfectly sound one.

According to Mr. Norris, however, the practical result in one case at least has been totally different from what was promised and expected. He referred especially to the International Paper Company, which was incorporated in New York in 1893. In the organization of that company it was given out that economies would be realized in the cost of production by displacing the salesmen, brokers and shippers unnecessary under the new system, by purchasing supplies on a wholesale basis, by saving in railway freights through ability to ship from the mills situated most nearly to the consumers, by establishing a uniform contract with consumers and abolishing long credits. These expectations were not realized, and according to Mr. Norris the promised policy of the company to promote the interests of the consumers was entirely abandoned, with the ultimate result to newspaper publishers of an increase of more than $4,800,000 per annum in the cost of news print paper.

The manner in which the originally declared purposes of the paper trust were defeated are extremely interesting and lead to the inquiry if the experience of other trusts has been similar. Mr. Norris stated that officers of independent paper mills which had been merged into the trust were reappointed to positions under the new concern at large increases over their former salaries. Manufacturers of wire for use on paper machines raised their prices, as did also the makers of felts used in the paper industry. The transportation companies moreover offset the expectation of economy in freight by raising rates and refusing to make special contracts, as they had done in the days of strong competition. Furthermore, the eagerness of the trust to buy up a huge supply of wood increased its cost of production because of the additional interest charges, etc., on the capital thus invested.

These experiences open a field of inquiry which so far as we are aware has not been looked into by any student of the trust question. If centralization of management does not result in ultimate economy, what basis is there for the organization of trusts except the desire of promoters to line their own pockets and owners of unproductive property to sell out at the expense of ignorant investors? The dangers which have been pointed out by Mr. Norris are natural and are to be anticipated It is no idle fear that the officers of independent companies are to be provided for at liberal salaries under the consolidation; in many cases such provision for them has been no doubt a part of the original contract. It must be remembered also that consolidations have not been limited to a few industries, but have taken place in almost all the important branches. Each industrial company is a buyer of supplies, but instead of being a giant against pigmies, who could be bullied, the situation has resolved itself into one of giant against giant, and the cost of the material needed by one can be increased by demands of another, with the final outcome of an increase in cost to the consumer, out of whose pockets the money must come eventually. It appears also that the railways may not quietly consent to a reduction of their receipts. Finally, it is evident that whereas small concerns may be willing to take chances on their supply of raw material, a big one having put all its eggs into one basket cannot afford to do so. The trust question has not yet been studied thoroughly by anyone, and we are completely in the dark as to whither the recent policy of industrial consolidation is leading, but the testimony of Mr. Norris throws light on some phases of the problem which have not heretofore been considered.

THE COLLAPSE OF THE SMELTING CORPORATION, LIMITED.

Our readers were not altogether surprised when we recently announced that the Smelting Corporation, Limited, which was floated in London three years ago to acquire and work the Fry process for treating zinc lead sulphides, had suddenly collapsed. Ever since this process was introduced to public notice we have criticised both it and the methods adopted by its promoters for exploiting it. In spite of the uncertainty as to the real value of the process, the Smelting Corporation was formed with large capital and very extensive and fully equipped works were erected at Ellesmere Port, on the Manchester Ship Canal, and as recently as September last we published a detailed description of these works written at our suggestion by a consulting chemist who had been intimately connected with Mr. Fry and the corporation. The collapse has come about in a highly sensational manner. Mr. Fry is now under arrest on the very serious charge of raising money from the bankers who financed the corporation. His operations were, it is charged, made by means of forged warrants for gold ores, and the amounts involved are considerable. It has been found now that Mr. Fry has been removed from the control of the corporation, that the claims put forward for the process have not been proved in practice; that the extraction is poor and that most of the silver is lost in the slag; and that the process is quite unsuited for anything except high-grade ores. To add to the misfortunes of the corporation, the adjoining landowners at Ellesmere Port consider the sulphurous fumes a nuisance and have applied for an injunction to stop it. The shareholders and directors are unable at present to determine the best course to pursue in order to retrieve their losses.

The process is really a much older one than Mr. Fry would ever admit. It was originally experimented on by Mr. Ellershausen some 15 years ago. Mr. Ellershausen treated lead sulphides with caustic soda and coke, so obtaining metallic lead, and he afterward recovered the soda. Any zinc in the sulphide passed away into the slag. Nothing came of the process in those days, as caustic soda is expensive and its recovery was not complete; also the zinc was entirely lost and no practical furnace lining could be devised. Mr. Ellershausen on abandoning it passed it on to Captain Angel, who, however, knew little or nothing of chemistry or smelting. Cheaper soda compounds were experimented with, and just about this time the process was introduced to the notice of Mr. Fry. The experiments then proceeded on a larger scale under the auspices of the Burnham Syndicate, a company which was specially organized for the purpose. In 1896 we gave some account of the process as worked by the syndicate, and we also told how Mr. Fry had treated Captain Angel in a somewhat highhanded manner by claiming that certain modifications introduced by him constituted an entirely different process from Captain Angel's and that he had consequently attempted to shoulder Captain Angel out of the syndicate. Our remarks at the time brought a threat of action for libel from Mr. Fry, but it never got further than a threat. In Mr. Fry's process the sulphides were treated with sulphate of soda, carbon and oxide of iron, and it was claimed that the silver and lead were obtained together while the extraction of the zinc from the slag was airily disposed of as a mere detail. Later on, when the works were established, the process was still further modified by a preliminary roast, so that the reaction in the furnace then consisted of a simple reduction of lead by carbon, while the soda salt was chiefly useful in the production of a liquid slag. In Mr. Fry's time the extraction of lead and silver was claimed to be very complete, but it is now known that the lead extraction is not by any means perfect, and that, as there is a very large bulk of slag formed, the proportion of silver carried away with it is considerable. In addition to these drawbacks no practical method has yet been devised for recovering the zinc.

In spite of the fact that the process, though interesting, was only in its experimental stage, the Smelting Corporation, Limited, was formed three years ago to work it on a large scale. At the time we pointed out that the prospectus contained many exaggerations, chiefly in regard to the contents of the ores which Mr. Fry claimed he could purchase for the corporation. The directors were all men of important position in the financial and commercial world in England, but unfortunately none of them knew anything about smelting, and at the time we pointed out that Mr. Fry was vendor, controller of the operations and seller of ores to the corporation. We went so far as to say that Mr. Fry reaped solid advantages in all three capacities, but though we were sceptical of the ultimate success of the corporation we did not anticipate quite such a startling denouement.

It is difficult to know what advice to give to the shareholders at the present moment. Under ordinary circumstances, the best course to pursue would be to consult some recognized authority on smelting as to whether the works could be adapted to some standard system of smelting, or to offer the works for sale to a north of England smelter. But unfortunately the difficulties with the adjoining landowners seem to stop the way for such a policy, and the prospects of the shareholders seem the reverse of hopeful.

NEW PUBLICATIONS.

"Observations on Indiana Caves." By Oliver Cummings Farrington. Chicago; published by the Field Columbian Museum. Pages, 20; illustrated.

This monograph, which is No. 8 of Volume I in the "Geological Series" published by the Field Columbian Museum in Chicago, contains a record of observations made by Dr. Farrington during a visit to Indiana in the summer of 1900. The caves visited were the Wyandotte in Crawford County; the Marengo, also in Crawford County; the Shiloh in Lawrence County; and Coan's Cave in Monroe County. Descriptions of these caves have been given in the reports of the Geological Survey of Indiana, the latest and most complete being by State Geologist W. S. Blatchley in 1896. In his visit, however, the author of the present monograph was able to collect some new and interesting facts which add materially to our knowledge of these curious geological developments. Some of these notes confirm the facts noted by previous observers, while others seem to be entirely new. The monograph is illustrated by several very fine photographs, and gives also a bibliography of works relating to the caves and their fauna.

"Clays of New York: Their Properties and Uses." Being Bulletin No. 35, Volume 7, of the New York State Museum. Prepared by Dr. Heinrich Ries. Albany, N. Y.; published by the University of the State of New York. Pages, 944; with map and illustrations.

"Bulletin No. 12" on Clay Industries was issued by the New York State Museum in 1895, and the demand for it was so great that it was decided to prepare a larger volume on the subject. The result is the present complete and handsome work. In this the material contained in the original "Bulletin" has been incorporated, but a very large quantity of additional matter has been added.

The book contains a general introduction on the occurrence, nature and classification of clays; followed by chapters on the different uses of clays, such as ordinary brick, paving brick, terra cotta, tiles, drain pipes, pottery, etc., etc. The minor uses of clay, as in making cement, mineral paints, clarifying oils, etc., are referred to; and also the use of clay in roadmaking, puddle, etc. Chapters are given on testing clay deposits and analyses of clays. The different clays and shales of New York are described, as well as the industries founded on them. Finally there is a bibliography of clay literature and a directory of clay workers in the State.

The book is illustrated by a number of photographs and drawings, showing clay deposits, works where clay is utilized in different forms, machinery for clay working and the like. It is very handsomely executed, the clear type and good margins making it a pleasure to read its pages. It is certainly an excellent monograph and a credit to the State. It ought to be fully appreciated by those for whose benefit it is specially intended.

The New York clays are of considerable economic importance, the value of the clay products of the State being between $6,000,000 and $7,000,000 yearly. It is increasing steadily and will soon exceed the last-named figure. A feature of recent years has been the development and utilization of the shale deposits in the manufacture of brick. The development of the clay deposits of Long Island is also a feature, and these deposits promise much for the future. The Hudson River clays have long been noted and the brick industry has reached a high degree of development in that district. Other well-known clays are those of the Champlain Valley and of Staten Island; the latter being very similar to the well-known clays of Eastern New Jersey. The improvement of machinery and the increased use of mechanical appliances in brick and pottery making is another noteworthy fact. Improved methods, greater care and the use of better constructed kilns have also aided the growth of the industry. All these changes are well treated in the present volume.

BOOKS RECEIVED.

In sending books for notices, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"Bulletin of the Philosophical Society of Washington Volume 13; 1895-1899. Washington; printed for the Society. Pages, 508; illustrated.

"State of Michigan. Eighteenth Annual Report of the Bureau of Labor and Industrial Statistics." Joseph L. Cox, Commissioner. Lansing, Mich.; State Printers. Pages, 196.

"Induction Coils. How to Make, Use and Repair Them." By H. S. Norrie. Second Edition. New York; Spon & Chamberlain. London; E. & F. N. Spon, Limited. Pages, 270; illustrated. Price, $1.

"Transactions of the Institution of Mining and Metallurgy. Ninth Session, 1899-1900." Volume VIII. Edited by Arthur C. Claudet and C. G. Warnford Lock. London, England; published by the Institution. Pages, 556; illustrated.

"Annual Report of the Secretary of Internal Affairs of the Commonwealth of Pennsylvania for the Year Ending June 30th, 1900. Part IV., Railroad, Canal, Navigation, Telegraph and Telephone Companies." Harrisburg, Pa.; State Printer. Pages, 976; illustrated.

STEEL PRODUCTION IN GERMANY.—A statement just published gives the production of steel in Germany for the full year as follows, in metric tons:

	1899.	1900.	Changes.	Per ct.
Ingots	467,721	332,935	D. 134,786	28.8
Blooms and billets	1,040,670	1,183,128	I. 142,458	13.7
Finished steel	4,793,523	4,799,196	I. 5,673	0.1

The items give the form under which the steel was sold or exported. The total production of ingots—basic and bessemer—is not given.

The output of wrought or puddled iron in all forms was 929,832 metric tons last year; a decrease of 173,833 tons, or 18.7 per cent.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

Shipping Mines in British Columbia.

Sir: I have been much interested in the "Canadian Supplement" to the "Engineering and Mining Journal" which you are now publishing monthly.

In the issue of April 20th, under the heading of Mineral Industry in British Columbia, a short notice is given of the shipping mines in the districts under review. In several instances I notice omissions of well-known producers, and believing you would wish to have the list as complete as possible, I beg to give you brief particulars of those shipping mines in which I am particularly interested, hoping that others will supply similar information, concerning those mines not mentioned in your correspondent's review. In the Slocan District the Queen Bess Proprietary Company, Limited, has been a regular shipper for the last three years and has paid two dividends. Particular attention has been given to development during the last 18 months with the result that a deep tunnel 1,700 ft. long has been driven and has tapped the vein 400 ft. below the previous workings with which it is connected by a shaft and raise, and the intermediate levels are now being driven so that it is expected that the mine will shortly be in a position to very materially increase its regular monthly shipments.

In the Ainsworth District the Highland (Kootenay, B. C.) Mining Company, Limited, commenced operations last year and fully equipped the Highland and Josephine mines with aerial tramway and a 180-ton concentrator. Unfortunately the fall in the price of lead occurred just at the time that the concentrator was ready to start, but during the 10 weeks that the concentrator was run this spring, 760 tons of silver-lead concentrates were shipped; it was then decided to stop further shipments until better prices could be obtained.

Under the Nelson heading your correspondent states that the Athabasca and the Whitewater have been "the only producers during the past year." This statement is certainly open to many corrections and why the Whitewater Mine of the Ainsworth Division should be singled out of the many shippers in that division is hard to understand. The Granite Gold Mines, Limited, situated within six miles of Nelson, commenced to run their 20-stamp mill in March, 1900. This mill, by the way, with the exception of the Wilfley tables, is entirely of Canadian manufacture. It was put up by the William Hamilton Manufacturing Company, Limited, of Vancouver and Peterboro, Ont., in the fall of 1899. During the 13 months ending April 30th, 1901, that this mill has been in operation 14,946 tons of quartz have been crushed yielding 6,365 oz. bullion and 478 tons of concentrates, which have yielded a gross value of $105,915. The ore treated is very free milling, the average percentage of extraction by amalgamation and concentration during the above period was over 86 per cent. Preparations are now being made to open up the mines in depth and so to increase the output, and at the same time to increase the mill from 20 to 40 stamps. The above mines are all operated by the Duncan Mines, Limited, of Nelson, and I think it must have been through an oversight on your correspondent's part that they were entirely omitted from the list of shipping mines in the district.

Ernest R. Woakes.

Nelson, B. C., May 10, 1901.

Mining in the Transvaal to 12,000 Feet Deep.

Sir: In your issue of September 16th, 1899, which, owing to the war, was very long in reaching me, I observed that you have given a somewhat full abstract of my "Notes" on the opening up of the deeper levels of the Rand and also favored me with a lengthy criticism thereon. These great southern deeps promise to take such an important part in the "good times" which many here so confidently expect in the near future and the prospect of which is buoying them up during the present trying period, and the matter is of such exceptional importance, that a criticism on my part of the opinions expressed in your review of my "Notes" may prove of interest.

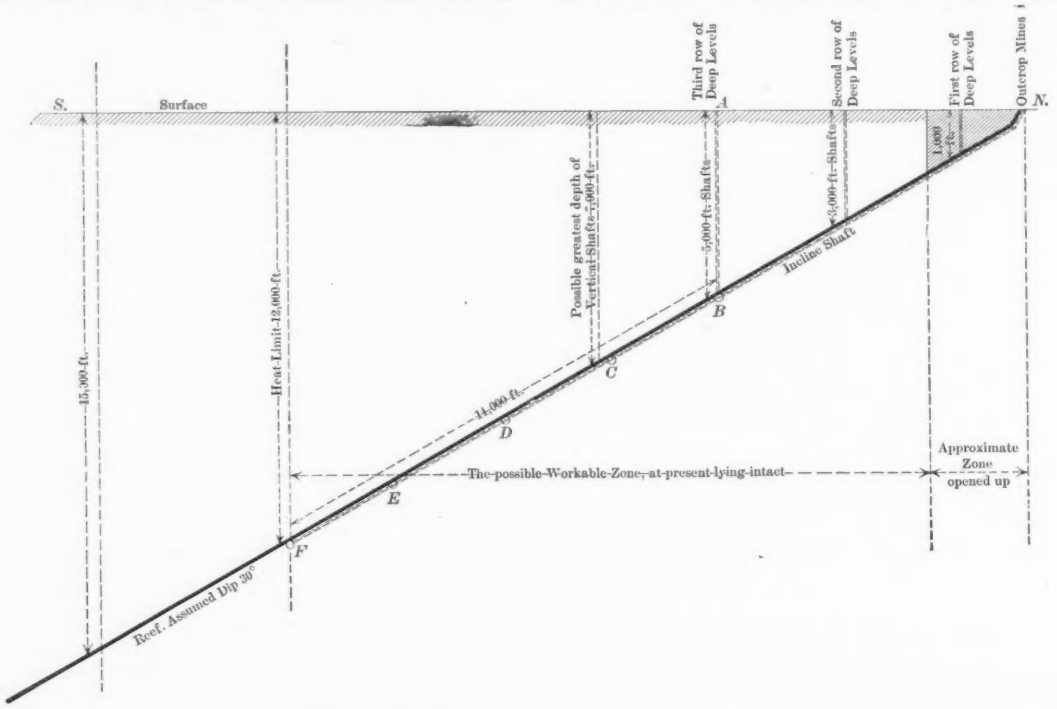
The gist of my "Notes" is (a) that taking Mr. L. I. Seymour's figures re the temperature of deep levels as a basis, it would appear that the heat of the strata is unlikely to become a prohibitive quantity until mining operations on the Rand reach about 12,000 ft. vertical; (b) that if we take 12,000 ft. as the vertical limit and the average dip as 30°, we bring an enormous area of reef within the workable zone; (c) that the possibility of the limit of vertical shaft sinking proving to be 7,000 or 8,000 ft., the ease and confidence with which long inclines can be engineered and worked compared with extremely deep vertical shafts, and the necessity for keeping financial risks as small as possible, point to the desirability of considering the advisability of the 5,000-ft. vertical shafts at present contemplated being arranged and designed, wherever possible, with a view to working the whole of the available reef lying below them, and (d) that owing to the great capital expenditure and working costs which will attend these very deep shafts, it is desirable to keep their number down to the lowest possible, and that, on a 3-ft. milling width and in average country, shafts, 38 ft. by 7 ft., inside timbers, placed about 5,000 ft. apart along the strike would each have sufficient hoisting and ventilating capacity for 400 stamps, a number of stamps which, with a 3-ft. milling width, would be somewhat liberal for the area served by each shaft in view of the maximum development capacity of the property.

Turning now to your comments, I note that you imagine it not unlikely that 15,000 ft. vertical will not be the limit of our work. My estimate of 12,000 ft. is arrived at by taking Mr. Seymour's figures (1° F. for each 203 ft. of vertical depth), and calculating the depth at which the strata will have a temperature of 125° F. I assume that the highest

temperature in the workings consistent with getting satisfactory work done will be 100° F., and I think that with ventilation on a liberal scale we may reasonably expect to keep the temperature of the workings down to 100° F. in strata registering 125° F., notwithstanding the long tour the air current would make. This I believe will be achieved without any cooling of the mine atmosphere being called for except such as will result in the ordinary course from the use of compressed air in drills and possibly pumps and hoisting engines. With a system of air chilling greater depths than 12,000 ft. might be open to us, but I prefer to limit the discussion to the consideration of natural cooling, though fully alive to the possibilities which may lie latent in liquid air, etc.; this latter might become an important agent in our deep mining operations, both as a motive power and refrigerating medium, but at present we know too little about it to warrant it entering into our calculations.

You mention that the temperature can be kept down by dividing the air current into short splits. The shortest course the current could travel would be direct from one shaft to the other, feeding the various stopes in the manner I have suggested, but here I would emphasize the effect which the great length and depth of the shafts will have on the temperature of the air reaching the working places. The table I exhibit in my "Notes" discloses that the air will spend no small portion of its time in the downcast shaft, and that it will there have its temperature considerably augmented. This, of course, points to the advisability of giving the current in the shaft the highest speed compatible with convenient working.

Your second paragraph leads me to think that you have not quite grasped my views and the nature of the shafts I suggest. The accompanying diagram will make this clear. The 5,000-ft. vertical A B would intersect the reef at B, and the 14,000 ft. of reef being between this and the 12,000-ft. heat limit would be worked by means of the long incline shaft F E D C B put down approximately parallel to, and within a few feet of, the foot wall of the reef, the incline being divided into four sections, F E, E D, D C and C B, in order to obtain a large hoisting capacity and convenient working. One great advantage of this scheme is that the financial risk is practically limited to the cost of sinking and equipping the 5,000-ft. vertical; once the reef is cut, further outlay would be regulated by its nature and the conditions of work and the prospect of adequate returns; the working conditions and value of the reef would be tested foot by foot right down to the working limit.



You suggest the possibility of putting down vertical shafts to 10,000 or 15,000 ft. on the Rand. In my opinion the sinking of such extremely deep shafts is not practicable under the conditions we have at present or may reasonably expect for very many years to come, and I feel sure that no such verticals will be attempted on the Rand where inclines can conveniently be put down. The difficulties and costs attending deep vertical shaft sinking will increase rapidly with the depth, while the rate of sinking will decrease—considerations which materially affect the maximum depth of verticals, as I have already indicated in my "Notes."

Taking your stand on the possibility of 15,000 ft. vertical proving to be our boundary, you doubt that the series of 5,000-ft. verticals would prove adequate for hoisting and ventilation down to this limit, and state that other verticals would be necessary. In this connection I would point out the improbability of any verticals greatly exceeding 7,000 ft., and also that if the mines are to reach the great depth of either 12,000 ft. or 15,000 ft. vertical, there will be no material difference, so far as hoisting and ventilating capacity is concerned, between working them through 5,000-ft. verticals or 7,000 or 8,000-ft. verticals. Again, touching the sufficiency of the 5,000-ft. verticals for the hoisting and ventilation down to 15,000 ft., we must keep in mind that the hoisting and ventilation requirements of a property are governed mainly by the number of stamps being supplied, and the number of stamps is, in turn, mainly dependent on the development capacity of the property. Here we get an insight of the new condition of things which we are to meet consequent on the great depth of the reef. The extension of the property to the dip which would ensue on the heat boundary proving to be at 15,000 ft. instead of 12,000 ft. vertical, would merely have the effect of prolonging the life of the mine; the development capacity would not be increased, and therefore the demands on the 5,000-ft. shafts would be the same in each case except in so far as influenced by the additional length and depth. That we cannot look forward to augmenting the development capacity of the area by sinking other verticals to the depth as you suggest is explained by the slow rate at which they will go down, and the great time required to strike the reef, a period so long that the incline shafts from the 5,000-ft. verticals would reach the same point on the reef as these deeper verticals about the same time, the number of development points thus remaining the same. This is assuming that the deeper shafts are started simultaneously with the 5,000-ft. verticals, a condition of things which would entail great financial risk. I have shown how it is possible with an average dip of 30° that an hypothetical 9,000-ft. vertical would intersect the reef only about 15 months ahead of the inclines from the 5,000-ft. verticals, a saving of time which, even if there was no risk attending the obtaining of it, may be quite ignored in view of the lengthy periods dealt with. Summing up on this point, I may say that I fail to see how the possible extension of our operations to 15,000-ft. vertical affords any weighty argument against opening up the deeper levels on the lines I have proposed.

I now reach your remarks on hoisting arrangements in these deep verticals. If I have not discussed the use of skips with independent attached electric or other motors, it is not because I have not given them attention, but because, after consideration, I have been driven to the conclusion that there is no prospect of their application. Ropes and hoisting engines serve our purpose sufficiently well to deter any responsible engineer from taking the great risk attending such an innovation as an unattached skip; the matter is one which does not lend itself to experiment and the risk to both life and capital would be too great.

Concerning the time elapsing between the first cutting of ground and the milling stage with the accompanying locking up of capital, I have indicated that, wherever possible, there is much in favor of working everything below 5,000 ft. vertical through vertical shafts of approximately this depth. While regarding the financial prospects of these southern deeps I would refer you to the great areas lying south of properties which have been recovering 40s. ($9.60) and over per ton milled, and to the reasonable prospect there is of economic reforms and technical improvements permitting these deeper levels being worked on broad lines at an average cost not exceeding 30s. ($7.20) per ton milled.

Cape Town, S. A., March 26, 1900. John Yates.

GERMAN COAL PRODUCTION.—In conference with the Prussian railroad authorities the coal operators in Prussia have anticipated for the current year an increase of about 5 per cent. in coal shipments over those of 1900. They expect some falling off in home consumption, but a considerable increase in exports. Efforts are to be made to extend the sale of German coal in the west and south of France.

THE GERMAN PATENT OFFICE.—A report has been issued upon the business done by the German Patent Office during 1900. The number of applications increased from 21,080 in 1899 to 21,925 in 1900. The number of patents granted increased in still greater proportion; from 7,430 to 8,784. The expired and terminated patents numbered 5,854; 25,115 remained in force at the end of the year. Up to the present 996 patents have remained in force the longest allowable time of 15 years. Of these, the class of dye stuffs claims more than any other, namely, 72.

THE PROVINCE OF PYRITIC SMELTING.

Written for the Engineering and Mining Journal by Herbert Lang.

(Concluded from page 590.)

At the first introduction of the pyritic process it was the impression—a natural one under the circumstances—that the method was most applicable to heavily sulphuretted ores containing little or no intermixed gangue matter and having an abundance of sulphur and oxidizable metals, which were deemed to have been formed by nature for this especial purpose. But the experience of years has shown that, while the chemical composition of the charges has a very important bearing upon the metallurgical question, the conditions as to cost of fuel, fluxes, etc., have a greater. In the case of such a substance as iron pyrites, whose combustion evolves a vast store of heat, but whose ordinary fusion generates large quantities of matte, we find that the process succeeds best when the charge contains but one-third or thereabouts of this useful compound, instead of the much larger proportion which was first judged to be appropriate. When the blast is heated to say 500° F., a properly proportioned charge containing 35 per cent. of pyrites will smelt with tolerable rapidity with less than 5 per cent. of coke, and will allow the formation of an economical proportion of matte, which should not go above one-eighth of the charge. As to the matter of extracting the gold, silver and copper that may be contained, a much smaller proportion of matte might answer quite as well; but the addition of the silica necessary to the higher concentration would cause the furnace to run slower, awaiting the decomposition of more of the pyrites. Charges may be made up of a vast variety of ores, sometimes totally without fluxes, and at other times with more flux than ore. I will mention a few of those which have been smelted, for the most part with good pecuniary results:

1. Impure ferric oxide carrying silver and little copper. Silicious sulphides of iron and zinc. Silver bearing limestone.
2. Silicious sulphides of iron and zinc, silver-bearing. Silver and copper bearing slags from ordinary process.
3. Tailings from silver mill, grouted with lime. Chalcopyrite in porphyritic gangue. Scrap iron.
4. Heap-roasted copper-bearing pyrites. Raw copper-bearing pyrites. Limestone.
5. Cupriferous pyrites, raw, 4 parts. Impure iron oxides (outcroppings), silver-bearing, 1 part. Gold quartz, 1 part.
6. Cupriferous pyrites, raw, 20 parts. Impure iron oxides (outcroppings), 12 parts. Gold quartz, 5 parts. Coke 8 per cent., blast 400° F.
7. Cupriferous pyrites, raw, 6 parts. Impure oxides, 2 parts. Gold quartz, 1 part. Coke 6 per cent., blast 400° F.
8. Cupriferous pyrites, raw, 10 parts. Impure oxides, 3 parts. Gold quartz, 2 parts. Barytic silver ore, 1 part. Coke 2 per cent., blast 550° F.
9. Barytic silver ore, 32 parts. Raw matte, 15 parts. Limestone, 7 parts. Old slags, 7 parts.
10. Cupriferous pyrites in porphyritic gangue, 11 parts. Rich slags, 2 parts.
11. Chalcopyrite and pyrite, hornblende gangue, 8 parts. Limestone, 2 parts. Ferruginous surface ores, 1 part.
12. Silicious gold ores, 5 parts. Magnesian limestone, 6 parts. Iron pyrites, 2 parts. Coke 15 to 20 per cent., cold blast.
13. Silicious gold ores, 16 parts. Magnesian limestone, 17 parts. Copper sulphide ores, 2 parts. Gold mill concentrates, 6 parts. Barren pyrites, 1 part.
14. Pyrites, copper and silver bearing. Barren silica. Limestone.

This list, which might be extended indefinitely, comprises examples taken from actual practice only and shows very clearly what a wide range of materials has been subjected to the pyritic influences with success and profit. Examples 12 and 13 show furnace work which is not classed usually as pyritic in the sense in which the term is used herein, but which is truly so if we consider the circumstance that much of the sulphur-bearing material is oxidized in the furnace, as shown by the very small proportion of matte produced, not over one-third probably, of the amount due to the unoxidized sulphides. No. 12 is strictly an iron matting proposition. Concerning No. 13 we are told that, without the addition of the barren pyrites, no matte whatever is formed; by which we infer that so large a proportion as one-fifth of the charge is deprived of its sulphur, and has its iron completely oxidized and taken up by the silica—a notable case of real pyritic smelting. Notice also that the slags produced by this fusion are notably silicious—perhaps the most so of any blast furnace matting slags made in America—which gives the key to the cause of this favorable concentration of matte, and corroborates the conclusion heretofore stated in this writing, that in order to effect high concentrations we must stiffen up our charges with silica to the highest permissible notch.

Iron pyrites, handled with a view to tonnage, is one of the easiest ores to smelt that we have. As before indicated, if there is no intention of securing the high concentration that compels slow running, we can put an almost unlimited quantity through a furnace in a day. The very high records that we hear of of late are made on charges consisting largely of this favorable and very fusible ore, but these runs often result in piling up the yard with low-grade matte which has to be further treated before leaving the works. This poor product may be advanced, as before said, in grade by re-smelting in the same furnace along with silica in some form, getting, as a rule, a slag poor enough to discard, and a matte of twice the richness of the first, or somewhat more. Matte acts like pyrrhotite (magnetic pyrites) in the furnace, and neither of them can be burned so easily as pyrite or marcasite, possibly because they have no volatile sulphur to pass off by mere heating, leaving the mass porous for the better action of the furnace gases upon it. This, I apprehend, explains the different behavior of pyrite and matte when subjected to heap-roasting; it is well known that pyrite roasts with freedom down to a fairly low percentage of sulphur, while matte is far more intractable, requiring oftentimes a protracted series of roastings in order to fit it for re-smelting by the ordinary method.

The pyritic process has been complained of because charges composed largely of magnetic pyrites have been run through and have come out "just as they went in." It is inconceivable that any ore could pass through a furnace totally unchanged; but if any did come near it, then magnetic pyrites would be the one. Of course, the fault lay with the metallurgist who conducted the trials in not having added the necessary silicious flux—a fault less likely to be committed now than in the early days of the art.

A valued correspondent, residing in Colorado, has put me in possession recently of the details of some very interesting experience in which he has contrasted the relative efficiencies of the hot and cold blast pyritic process more thoroughly than I have known it to be done previously. From the information thus elicited I will make a few excerpts which I think will be of use to metallurgists generally. Out of a varied experience my correspondent selected as an example illustrating the economies of the hot blast the following case: The charge: Ore, 1,950 lbs., of 5 different classes; flue-dust, 150 lbs.; limestone, 600 lbs.; slag, 500 lbs.; coke, 7.3 per cent.; blast temperature, 70° F.

This charge ran at the rate of 150 tons per day, effecting a concentration of 6 into 1, the matte carrying 30 per cent. copper. On account of an accident to the pipe stove the heating of the blast became impossible, and the furnace was run for a time on the same charge but with the use of 14.3 per cent. of coke, or nearly double the former allowance. After the change the daily duty of the furnace dropped to 104 tons, while the concentration remained the same. Without reproducing the figures showing in detail the results of the smelting, I will summarize them by saying that, while it cost $35 per day to run the hot-blast stove, there was $30.45 saved on the amount of coke which was required to smelt 150 tons with hot air, over that required to smelt 104 tons with cold. And the total pecuniary advantage arising daily from the greater tonnage put through amounted to $144.45 in favor of the hot blast, or rather less than $1 per ton of charge, or $1.60 per ton of ore, which is an economy somewhat higher than pyritic smelters are ordinarily accustomed to derive from the hot blast. However, the question is complicated with that of the cost of coke, the beneficial effects of large tonnage, and other considerations which vary with every locality.

Ordinarily the proportion of coke required for the smelting was but 3 per cent. as figured on the charge, and the principal features consisted in dividing the work into two operations—the first consisting in "fusing an easy-running charge carrying 3 to 4 per cent. copper, to gather the precious metals, using as little coke as possible to avoid any reducing action, and to keep the atmosphere as oxidizing as might be. In this way a large tonnage was made and a fair concentration (5 to 1) and an excellent saving of values effected. The next step—the re-fusion of the matte with silicious ores—utilized quartz ores on which there was a good treatment charge; while the product of second matte carried from 40 to 50 per cent. copper, and was shipped to a refinery. The total concentration effected by the two smeltings was 15 to 1. The slag derived from the first smelting carried 38 silica, 36 ferrous oxide, 14 lime, the balance being alumina, zinc, etc. Arsenic and antimony were generally completely volatilized. Lime was used to a considerable extent, to lighten the slag and to replace iron, which was scarce. Experience in this regard showed that, while limestone could be dispensed with, it was advisable to continue its use on account of higher savings and increased tonnage. It also diminished the tendency of the fusible materials to form incrustations in the upper part of the furnace. In the re-smelting the aim was to make a slag of 40 to 50 per cent. silica. The furnace was run entirely by experience, quartz being added as the oxidation of the matte justified, this being governed by the condition of the inside of the stack."

These details, reproduced mainly in my correspondent's own words, give evidence of very careful work, carried on with an appreciation of the powers of the pyritic influences which is somewhat rare among metallurgists. Although the process with its modifications has been in practical use for nearly a decade, and a great deal of printed matter has appeared, whereof the "Engineering and Mining Journal" has been the chief vehicle, it does not appear that the lessons have sunk very deeply as yet, or that the truths elicited with so much expenditure of time and toil have penetrated extensively into the minds even of those who should be the widest awake to such matters. On the one hand there are numbers of persons who, charmed with the idea of smelting without fuel, are ready to rush into pyritic smelting on the most unfit ores; and on the other there are many professed metallurgists who in their overdone conservatism are unable to commend the process under any circumstances, thereby misleading their clients. But by far the worst enemy that the process has to contend with are the horde of pestilent quacks and dead-beats who infest the smelting world and have fastened themselves upon pyritic smelting in particular, and with their patents, their secrets and their processes threaten to bring it into disrepute.

To this writing, already, I fear, too long, I will add the resume of the principal points which appear pertinent to the examination.

1. The difference between cold blast pyritic and ordinary matting consists only in the make-up of the smelting mixture.
2. The ordinary process can probably produce more acid slags than the pyritic method.
3. The ordinary can produce more basic slags than the pyritic method, so far as shown by present practice.
4. The application of the hot blast to pyritic smelting saves fuel and increases the daily capacity of furnaces, but the process is still subject to the same limitations as regards the proportions of silica.
5. Mixtures deficient in sulphides cannot be successfully treated by pyritic smelting because they would produce no matte.
6. Mixtures deficient in silica cannot be properly concentrated in the pyritic way.
7. Silica governs the concentration of pyritic charges.

8. Matte may be concentrated by fusion in the pyritic stack, but not in the ordinary.

9. Iron seems to pass into the pyritic slags as singulo-silicate.

10. Lime seems to form bi-silicates, mainly or wholly, in the pyritic furnace.

THE FRONGOCH ZINC AND LEAD MINE, WALES.

Written for the Engineering and Mining Journal.

This mine is the property of the Societe Anonyme des Mines de Frongoch, a Belgian company, and is situated in the County of Cardigan, Wales, about 15 miles east of Cardigan Bay. The mine was opened up and successfully worked in the beginning of the last century, some 80,000 tons of zinc and lead ore (blende and galena) having been produced from it. The vein is a true fissure lode running east and west, and dipping south at about 75°. It consists chiefly of broken silurian schists and quartz carrying galena and blende together with a very small percentage of iron pyrites. The country rock is composed of silurian schists, the lode crossing the formation at an angle of about 50°. The mine is now being opened up and worked by means of a main shaft which has reached the lode at the vertical depth of 160 m., thereafter following the same by an incline to the depth of 277 m.

The mine was purchased by the Belgian company in the year 1898, with the view of equipping it with such a modern and complete plant as would insure a profitable treatment of low-grade ores, it having been found impossible to continue work with the old machinery and upon the old system. Plans were accordingly worked out and the installation was completed during last year (1900).

The following is a short description of the electric plant and the appliances connected with the working of this mine. In the immediate neighborhood there are three large reservoirs capable of supplying water for about 9 months in the year, it being customary in Wales to collect and store in such reservoirs the rainfall which in the mountainous districts of that country reaches about 1.80 m. per annum.

A new watercourse was constructed about 5,000 m. long, which collects on its way the water coming from the reservoirs, carrying it to a fourth reservoir of the capacity of about 40,000 cubic meters. This new reservoir has been placed at a suitable point for giving a fall of 125 m., the water being conveyed to the bottom of the valley by riveted steel pipes 450 m. long and 0.60 m. in diameter. At the bottom of the fall an electric generating station has been erected which supplies the mine with 400 H. P. all the year round.

The electric generating station includes: 1 tubular boiler, Babcock & Wilcox patent, giving steam to the engine at 150 lbs. pressure; 1 high speed vertical engine, Willans & Robinson patent (Rugby, England), the boiler and the steam engine having been fixed alongside the water power plant for the dry months of the year and as a reserve plant; 1 Pelton wheel with automatic governor supplied by Escher, Wyss & Company, of Zurich, Switzerland; 1 three-phase alternator of the Allgemeine Electricitäts Gesellschaft of Berlin. In addition to these main parts of the generating station there are the dynamo for the excitation of the alternator as well as for the lighting of the engine room and boiler room, switchboard with all resistances, measuring instruments, fuses, cut-off, etc.; and 12-ton overhead travelling crane for repairs. Two elastic shifting couplings enable either the steam engine or the Pelton wheel to drive the three-phase generator, all machinery being run at the same speed of 375 revolutions. The accompanying illustration, Fig. 2, shows the engine room of the central generating station.

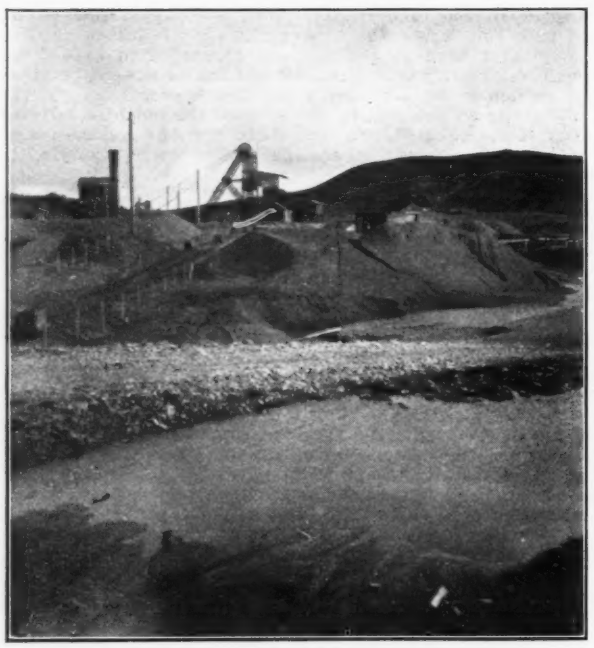
The electric current is generated at 2,300 volts and carried to the mine by means of bare copper wires for a total distance of about 2,000 m. At 1,200 m. distance is situated the dressing mill fitted for treating 15 tons of crude ore per hour. This mill is equipped with two high-tension electric motors of 50 H. P. each, but capable of working up to 75 H. P. each if required. One electric motor drives the trommels, the jiggers, the slime tables and the pumps; the other drives the crushing machinery.

From the main line at this point the current is taken for the electric light and for this purpose a 10 Kw. transformer is fitted up and 3 series of arc lamps are derived, each series being of 6 lamps, but only 15 lamps are burning at present, three having been found unnecessary; therefore three chocking coils have been introduced. At 650 m. distance from the dressing mill is the main winding shed and here two electric motors of 75 H. P. each are derived from the main line.

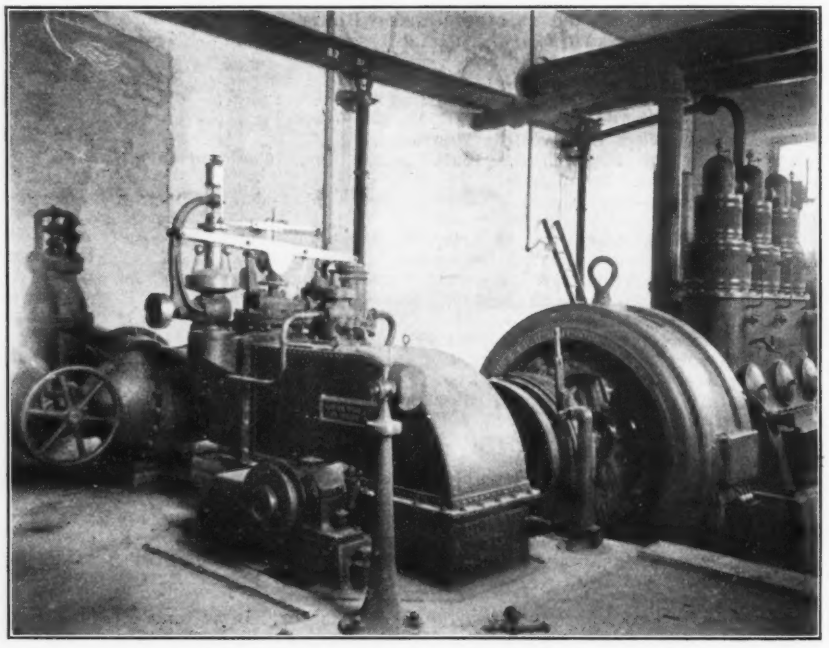
One electric motor, a high tension one, is situated in the mine at the 160 m. level, where the current is conveyed to it by means of highly insulated cable. This motor is fixed on the bed-plate of a three-ram pump capable of delivering to surface 25 liters of water per second or 1,500 per minute. The electric motor is connected by an elastic coupling to the main pinion shaft and runs at 537 revolutions. A small transformer situated in the pump room gives the current for the incandescent lamps of the said room and of tne main 120-meter level.

The second electric motor of 75 H. P., a low tension one, is situated on the surface and supplies the power for the double drum hoisting machine, to which it is connected by means of an elastic coupling. The motor is so constructed as to give 125 H. P. for the starting of the windlass. Between this low tension motor and the high tension line a 60 Kw. transformer is naturally introduced reducing the voltage from 2,200 volts to 220 volts.

The main feature of this electric winding plant is the resistance for regulating work of the motor and the commutator for reversing the current and consequently the rotation of the motor. The reversing of the current is obtained by the engine-man handling a single lever. This reversing lever is so connected with the brake as to prevent in any way the starting of the motor when the brake is acting. The arrangement is a very simple and original one and very useful, as it has achieved its object of simplifying to the utmost the manoeuvers required and ot preventing accidents caused by possible mistakes, which in this case are entirely obviated.



1. MINE AND HEAD GEAR.



2. ENGINE ROOM AND DYNAMOS.

FRONGOCH MINES, WALES.

From the transformer fixed in the winding shed are derived the lamps for lighting the winding room, the tipping platform of the shaft, the sorting shed and the top end of the endless chain. On the way from the dressing mill to the main hoisting shed a small transformer supplies a low tension current for the lighting of the offices of the mine. At 175 m. distance from the main winding shed another 30 H. P. high tension motor has been fixed. This motor is connected by means of an elastic coupling to the pinion shaft of a small single drum windlass.

The accompanying diagram, Fig. 3, shows the electric plant with all details as to power, number of revolutions, voltage, instruments, lightning arresters, connections, size of the wires, etc., and it gives a good idea of an electric installation intended for all purposes of mining work. With this plant, at an outlay of about £10,000, the Belgian company has secured 400 H. P. for the mine all the year round at a comparatively low price per unit.

A 20-m. pithead-gear has been erected for the main shaft from which all the ore is taken, tipped in ore bins, screened and hand-picked, the capacity of the bins being about 450 tons. From here the ore is conveyed to the mill by means of wagons and an endless chain. Fig. 1 shows the pithead-gear, the ore bins, the sorting shed and the endless chain.

The new installation was begun in June, 1899, and in the month of June of the following year (1900) the plant was completed and in working order. All these important installations were carried through by the local manager, Mr. B. Nogara, an Italian electrical and mining engineer, with the assistance of another engineer, Mr. Invernizzi, and the final result has been entirely satisfactory.

THE MINERAL PRODUCTION OF SPAIN.

In the "Engineering and Mining Journal," April 27th, we gave the iron ore production of Spain, and March 30th that of coal and coke. We give below the figures for the remaining mineral production of the country, as collected and prepared by Don Adriano Contreras for the "Revista Minera" of Madrid. The figures are all in metric tons.

Silver.—The total production of silver in Spain in 1900 was 94,507 kgs., all of it being obtained by desilverizing lead except about 3,000 kgs. recovered from the dry ores of Hiendelaencina. In addition 89,355 kgs. were exported in argentiferous lead. This makes the silver output in 1900 a total of 183,862 kgs., against 169,451 kgs. in 1899; showing an increase of 14,411 kgs.

Quicksilver.—The production of quicksilver in 1900 was 32,237 flasks, which compares with 39,364 flasks in 1899, showing the serious reduction of 7,127 flasks, or 18.2 per cent. Of last year's output 30,612 flasks were produced by the Almaden Mines, 1,125 by the Sociedad el Porvenir and 500 by other companies. The falling off was entirely in the Almaden product.

Copper.—The production of copper-bearing pyrites in the provinces

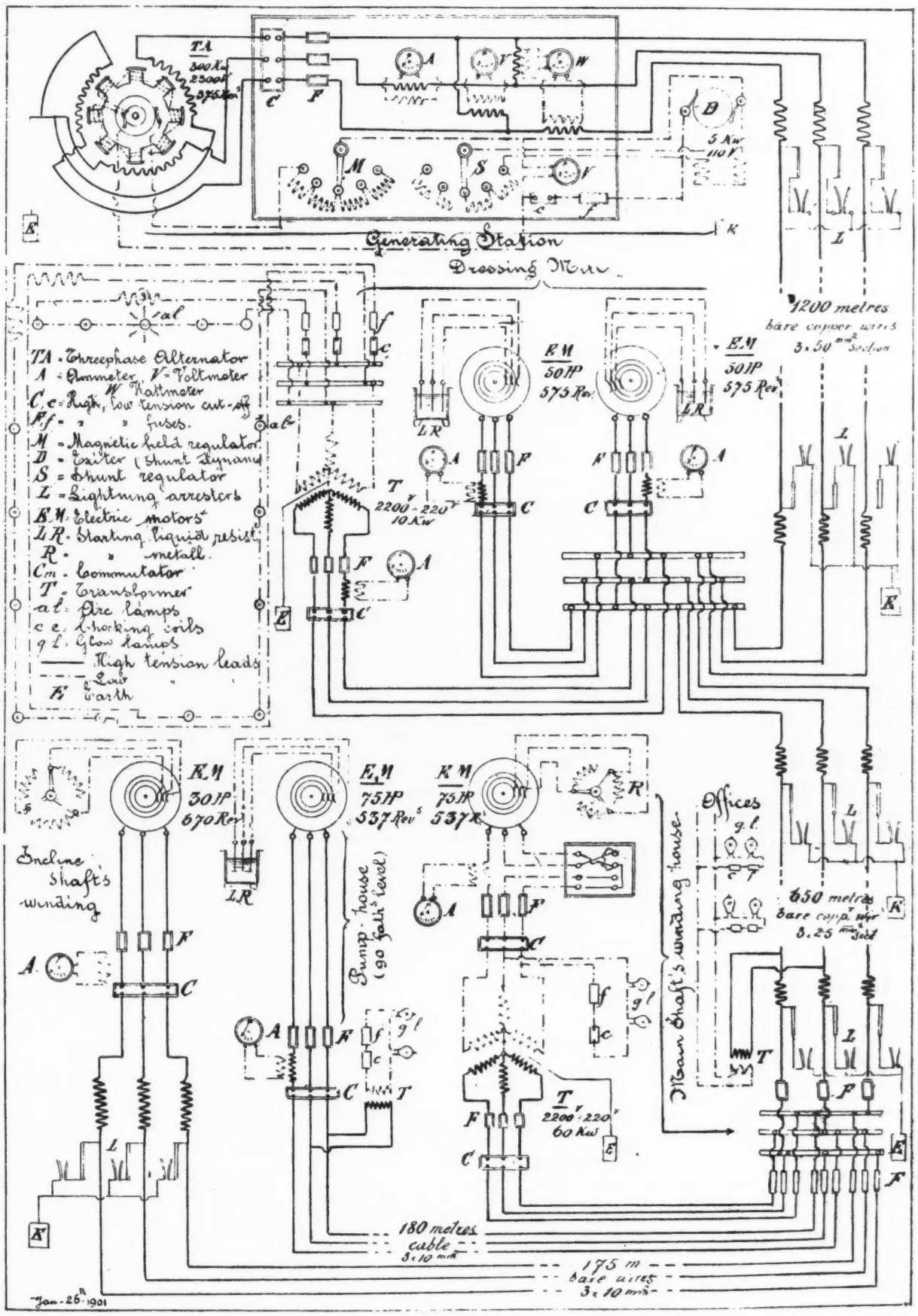


FIG. 3.—DIAGRAM OF ELECTRIC PLANT, FRONGOCH, WALES.

of Huelva and Sevilla last year was 2,652,640 tons, which compares with 2,521,875 tons in 1899; showing an increase of 130,765 tons. Of last year's production 1,894,504 tons were from the Rio Tinto Mines, and 449,226 tons from those of the Tharsis Company. Of copper ores other than pyritic there were mined last year 4,500 tons, of which 3,184 tons were from Navarra. The exports of copper material were, in metric tons:

	1899.	1900.	Changes.
Cupriferous pyrites	948,852	1,029,141	I. 80,289
Copper precipitate	28,444	29,084	I. 640
Copper matte	14,509	19,591	I. 5,082
Black copper	1,089	1,235	I. 146

The total production of copper from Spanish ores last year is estimated at 45,000 tons.

Lead.—The production of lead in Spain is given as below, in metric tons:

	1899.	1900.	Changes.
Lead exported in pigs, bars, etc.	162,131	153,937	D. 8,194
Lead exported in pipe, etc.	664	544	D. 120
Lead exported in ores	6,212	3,109	D. 3,103
Lead consumed in Spain	13,500	14,000	I. 500
Totals	182,507	171,590	D. 10,917

The production of white lead, made chiefly in Linares, was 3,000 tons last year. The lead used in making this is included above in the lead consumed.

The lead exported in bars and pigs was as follows, in metric tons:

	1899.	1900.	Changes.
Argentiferous lead	68,955	71,492	I. 2,537
Soft lead	93,176	82,445	D. 10,731
Totals	162,131	153,937	D. 8,194

Exports of lead ores in 1900 were 5,181 tons, of which 3,524 tons were argentiferous galena. The total showed a decrease of 5,173 tons from 1899.

Zinc Ore.—The zinc ore mined in 1900 was 87,000 tons, against 119,770 tons in 1900. The exports in 1900 were 41,776 tons blende and 19,423 tons calamine, a total of 61,199 tons. There is only one zinc reduction plant in Spain, the Arnao Works of the Real Compania Asturiana, where 5,784 tons of spelter were made last year. In 1899 the output was 6,328 tons; the decrease in 1900 being 544 tons.

Iron Pyrites.—Exports of pyrites last year were 356,019 tons, against 321,278 tons in 1899, an increase of 32,741 tons. Of these exports 54,756 tons were ordinary crude pyrites; the balance was from the mines of the province of Huelva, and was the residue left after the copper had been extracted by the wet process.

Manganese Ore.—The manganese ores mined in 1900 reached a total of 131,450 tons, all of which was exported, going chiefly to Germany. The production in 1899 was 139,352 tons, showing a decrease of 7,902 tons last year.

Asphalt.—The output of asphalt in Aleva was 3,261 tons and in Navarra 443 tons; a total of 3,704 tons, which compares with 2,537 tons in 1899.

Cement.—The production of hydraulic cement last year was 147,831 tons. Nearly all of this was made in Guipuzcoa, Gerona and Barcelona. The production in 1899 was 169,966 tons, so that the decrease last year was 22,135 tons. There were two works in operation last year making Portland cement, and their output was 20,000 tons.

Salt.—The total production of salt in Spain during the year 1900 was 480,000 tons, against 598,000 tons in 1899. The exports were 205,562 tons, against 326,357 tons in 1899. The decrease of 120,795 tons was due largely to the loss of the colonial trade.

BITUMINOUS COAL PRODUCTION IN PENNSYLVANIA.

The advanced statement of bituminous coal production in Pennsylvania in 1900, as reported by the mine inspectors, and compiled in the Bureau of Internal Affairs at Harrisburg, has been received through the courtesy of Mr. James E. Roderick, Chief of the Bureau of Mines. The cutput of the bituminous mines of the State during the year was as follows, in short tons:

	Total.	Per ct.
Shipments by rail, river, etc.	58,564,954	73.8
Consumed in making coke	18,702,421	23.6
Sold to employees and others at mines	723,731	0.9
Used for steam, etc., at mines	1,327,256	1.7
Total bituminous coal mined	79,318,362	100.0

The total coal mined in 1899 was 73,066,943 tons, so that last year showed an increase of 6,251,419 tons, or 8.6 per cent. The total was the largest ever reported in one year.

The coal mined last year per employee was an average of 728 tons. The coal mined per day's work was 3.32 tons. The average time worked during the year is reported at 219 days. Thus in an exceptionally active year the mines worked only a little over two-thirds time. This indicates that in the bituminous region—as in the anthracite—there is a surplus of labor and of producing capacity.

The black powder used is reported at 296,367 kegs. There was used also 243,517 lbs. dynamite, this explosive being employed chiefly in rock and dead-work. The average coal mined per keg of powder used was 268 tons.

The number of boilers in use at bituminous coal mines is reported at 1,723, the aggregate rating being 138,139 horse power. Of these boilers 561 are classed as cylindrical and 1,162 as tubular. The total number of steam engines of all classes was 1,124, the aggregate rating being 94,309 horse power. There were 225 air compressors in use during the year, and 196 electric dynamos. The total number of pumps delivering water to the surface was 575, their rated capacity being 217,643 gals. of water per minute. The average quantity of water delivered was 96,693 gals. per minute. On this basis it would appear that an average of 641 gals. of water was lifted for each ton of coal mined. It also appears that somewhat over 44 per cent. of the pumping capacity was continuously employed.

Mechanical haulage is much more generally in use in the bituminous coal mines of Pennsylvania than in the anthracite collieries. With a tonnage over one-half greater than that of the anthracite, the bituminous miners employed last year 9,633 horses and mules, or about half the number at work in the anthracite country. On the other hand, there were many more locomotives in use. The total number reported in bituminous mines was 310, of which 119 were steam locomotives, 17 being compressed air and 174 electric motors. Nearly all the newer collieries are equipped with electric motors for haulage.

Coke.—Coke production in Pennsylvania was very large in 1900, the total output having been 12,185,112 tons. There were 30,120 ovens of all kinds reported, showing an average production of 404 tons per oven. During the greater part of the year the proportion of the total number of ovens in use was larger than ever before. Large as the production of coke was last year, it did not quite equal that of 1899, which was 12,192,590 tons. The decrease, however, was only 7,458 tons, or 0.06 per cent.

The coal reported above as used in making coke—18,702,421 tons—shows an average consumption of 1.53 tons coal in making 1 ton of coke.

Accidents.—The statement of fatal and other accidents is given below. In the calculations of the number of day's work the average of 219 days given in the inspectors' reports is accepted:

	Number.	Days' work.
Total number of employees	109,018	23,874,942
Number killed	265	.....
Number injured	584	.....
Total casualties	849	.....
Number killed per 1,000	2.43	0.011
Number injured per 1,000	5.36	0.024
Total casualties per 1,000	7.79	0.035

There was, therefore, 1 casualty to 28,121 days' work. It must be remembered, however, that the figures for days' work are necessarily only approximate, being based on the general average, while the numbr employed actually varies considerably from day to day. Probably the number given is somewhat too high, since it assumes a full force for each working day.

THE MINERALS OF THE OTTOMAN EMPIRE.

By H. R. Jastrow.

Although the soil of the Ottoman Empire, in Asia Minor as well as in Macedonia and Thessalia, is rich in a large variety of minerals, the development of the bulk of the deposits is, so to speak, still in a state of infancy. Political rivalries and jealousies, defective transportation facilities, lack of financial means and technical experience are the main factors that have persistently retarded the exploitation of Turkish ore deposits. Mining is confined to a limited number of properties, worked on a small scale, partly for the benefit of the Government and partly for the use of a clique of heavily capitalized companies, of which the chief stockholders are Turks. In view of Abdul Hamid's recent declaration of poverty on the occasion of the United States Government's demand for the long overdue missionary indemnity, it is interesting to note the resources which this complex empire, either through stupidity or through actual design, is holding in reserve for future development.

One of the most important minerals in Turkey is chrome ore. This mineral has been found to exist there in larger quantities than in any other country in the world. It is now mined in Daghardi near Kutahia, in Muhalitsch, Gemlik, Smyrna, Makri and Adalia, and in European Turkey near Salonica and in the Province of Kossowo. The most productive of these mines are those of Daghardi, which yield an annual output of between 12,000 and 15,000 tons and contribute the bulk of the exports of chrome ore. Germany, Great Britain and the United States buy this ore in about even quantities, while France takes a smaller amount.

Silver lead is found in the Government mines of Bulgar-Dagh (the Cilician Taurus) and in those of Balia, in the Brussan Province. The latter have recently been installed with modern mechanical equipment. They are in the hands of a local company which, with the good mechanical means at its disposal, is producing clear ore of 82 per cent. lead. The percentage of silver varies between 1¼ and 4. Lidjessi, in the Province of Swas, also produces silver lead in fair quantities. Turkey's yearly exports of this material approach 15,000 to 20,000 tons of silver-lead ore and several thousand tons of silver-bearing lead.

Zinc ore is found to some extent in Balia, but its chief source of supply is Karsasu on the Black Sea. Zinc ore is also found in the neighborhood of Smyrna. The total production approximates 5,000 tons per annum, the bulk being shipped to Belgium. Another mineral exploited in Balia is manganese ore; its quality is, however, poor. Of more importance are the deposits near Kassandra (Salonica), although even these ores do not possess more than 45 per cent. manganese. The output of the Kassandra mines is estimated at 45,000 tons per annum, while sample shipments abroad from the mines of Smyrna, Makri and the Black Sea vary between 1,500 and 2,000 tons.

Another mineral of importance, found in Vilaja Hudavendikiar (Brussa) is antimony ore. Of this mineral, however, only the mines of Demir-Kapu have thus far been exploited, the latter having a present capacity of about 200 tons yearly. The copper ore deposits near Arghana Maden, in the Armenian Taurus, are also of considerable note. These produce yearly in the neighborhood of 1,500 tons of copper, the bulk of which is exported to England via Alexandria. The material is very high grade. Of less importance are the deposits near Tokat and Dedengatsch.

Two further products which do not exactly belong to the category of ores in Turkey, are borax and meerschaum. The former is found principally at Sultan-Tschair, in the Hudavendikiar Province, and is shipped to England, France and Germany, via Panderma; the total exportation approximating 18,000 tons yearly. The meerschaum exploited in the mines of Eskischehir is shipped to Austria, as a rule in quantities of 120 to 150 tons.

Besides the ores already mentioned arsenic is mined near Smyrna to the amount of about 150 tons; sulphur near Salonica; asphalt in Albania, Syria and the Euphrates amounting to 800 to 1,000 tons; while asbestos, iron ore, nickel, tin and bismuth and a few other raw materials are found here and there in varying quantities, but are not systematically, exploited. Last, and more important, are the marble, granite and coal deposits. The first two products are produced annually to the extent of 5,000 to 6,000 tons. Coal exists in considerable quantities, especially on the northern boundary of Asia Minor, but is mined at present only to the extent of 360,000 or 400,000 tons. Lithographic stones, graphite and ozokerite can also be obtained in various districts for the working.

Possibly the greatest hindrance to the development of mining in the Ottoman Empire is found in the many complicated Government restrictions to be complied with before possession can be obtained. For example, the right to exploit a mine in Turkey must be secured through a royal "irade," the request for which must be accompanied by an application for a permit to prospect. In this request the prospector must guarantee his responsibility for all damages inflicted, and must be indorsed by some responsible person who will go bond for the fulfillment of the conditions exacted. The privilege of prospecting is then granted for a period not exceeding two years, while the final concession for the exploitation of chrome, manganese and other ores is granted for a period of 99 years. Every mine is obliged to pay a ground tax of 10 piasters per hectare (about 2 acres). In addition, on the exportation of lead, copper, antimony, zinc, etc., 5 per cent. of the value and 1 per cent. export duty goes to the Government. Chrome and manganese ores and borax pay a tax of 15 per cent. and 1 per cent. export duty. On all ores from the mines of Balia, however, a rebate of 3 per cent. is allowed. The holder of a prospecting permit has further the privilege of exporting up to 100 tons of ordinary ores, and up to 2,000 tons of chrome and manganese ores as sample shipments without payment of the tax; he must, however, deposit, as guarantee of his good intentions, double the regular tax, which is refunded to him when the ores leave the country.

THE D'AURIA AIR-COMPRESSOR.*

By Henry G. Morris.

The present paper calls attention to a new form of air compressor, so extraordinary in character that, had I not built several of them and seen them work satisfactorily, I would hardly dare to bring it forward as an accomplished mechanical fact: namely, the d'Auria air-compressor, built on the same principle as the d'Auria pumping-engine. This is a non-rotative compressor of the duplex type. So far as steam-economy is concerned, it may be said to have less limitations than even a crank and fly-wheel compressor, for the simple reason that, while in the latter the high degree of steam-expansion calls for heavier fly-wheels, heavier crank-shafts, etc., the moving parts in the d'Auria compressor are not in the least affected by the degree of steam-expansion, and the machine works as well with a high as with a low expansion. Figs. 1 and 2 explain themselves.

Since there is no mechanism of levers, etc., employed to equalize the propelling force and the resistance at every point of the stroke—such as is used, for instance, in a Worthington high duty pumping engine—the question arises, how perfectly smooth action is attained in the d'Auria compressor, starting at the beginning of the stroke with a high initial pressure of steam against no resistance, and ending the stroke with a propelling force practically nil, and resistance at a maximum.

This result is accomplished by the d'Auria "hydraulic compensator," which is a cylinder fitted with a plunger carried by the same piston rod which connects the steam and the air piston. The ends of the compensator cylinder communicate with each other by means of a loop of pipe turned into the form of a very rigid bedplate, which adds to the strength of the machine, and preserves, under all conditions, the alignment of the piston rod. This cylinder and pipe are filled with water or any other liquid; and, as there is no loss of liquid beyond that which may leak through the stuffing boxes, are easily kept full from any source of water supply, through a small pipe and two check valves, shown in Fig. 2.

When the compressor is in action the liquid column contained in the compensator pipe is affected reciprocally, to and fro, by the plunger, and acts in exactly the same manner as a balance wheel in a watch, taking up the excess of energy in the first half, and giving it back, with an exceedingly small loss due to friction, in the second half, of the stroke.

The action of this compensator is so perfect that the machine is never bolted down to the floor on which it stands, and, under such conditions, can be run at a high rate of speed without vibrations. I have seen an 8 by 9 by 8-in. compressor of this type work suspended in the air from chains, and also run while on rollers, and another of the same size making 340 strokes per minute without being bolted to the floor—and under these conditions I was able to balance upon it a 5-cent piece on edge. These compressors have no dead centers. The cycle of their action being limited to the period of one stroke, they are able to start and stop instantly; and, if fitted with a sensitive pressure-regulator, they will stop completely on a small variation of air-pressure, and will start promptly when that pressure falls slightly below the normal.

It may be asked, What would be the effect of a sudden release of load on the compressor, such as might happen by the breaking of the air-pipe. This contingency is met in the d'Auria compressor, as in the d'Auria pumping-engine, by a simple and effective device. The exhaust-

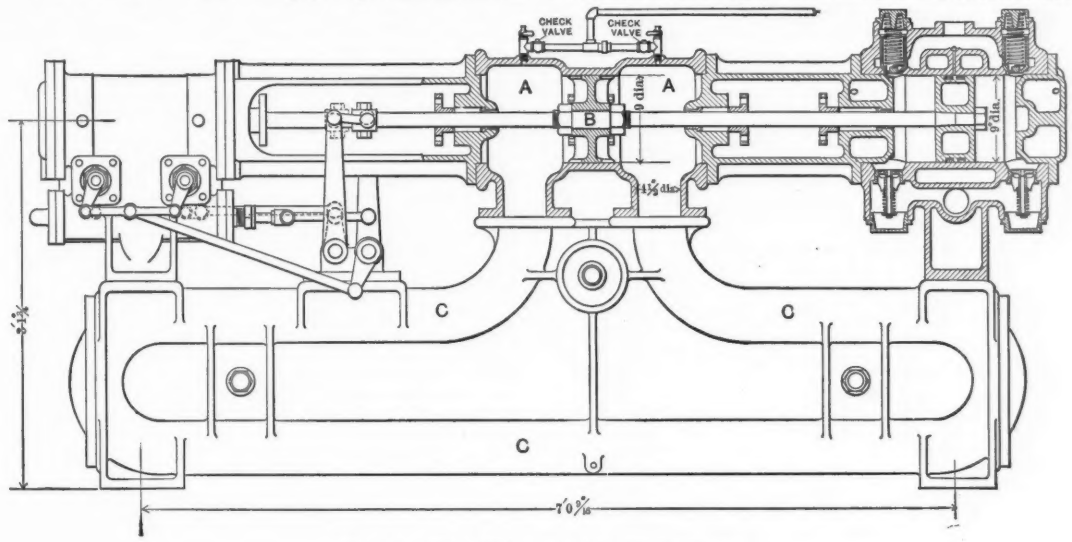


FIG. 1.—THE D'AURIA AIR COMPRESSOR.

steam in the steam-cylinder is cut off by the piston itself about 1.5 in. from the cylinder head; and, from this point on, a considerable amount of steam cushioning is done in the cylinder, stopping the piston, under ordinary conditions, at about ⅜ in. from the cylinder head. Of course, this ⅜ in. clearance is filled up with steam at boiler pressure, which, while it does no harm, does a considerable amount of good by keeping the piston and cylinder head hot when steam is admitted. On the other hand, the compensator plunger has a number of slots, which, in case

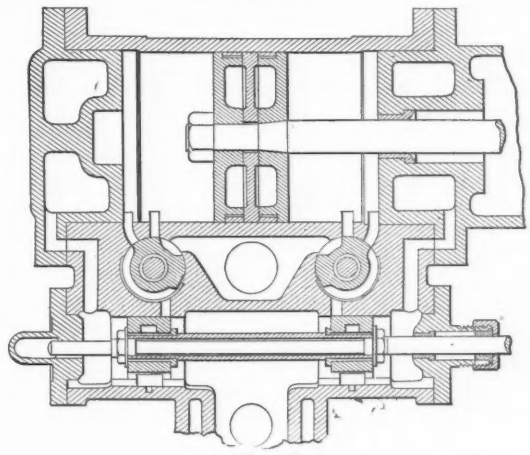


FIG. 2.

the stroke becomes longer than normal—that is, if the clearance becomes less than ⅜ in.—overrun the bearing of the plunger, and open a by-pass for the column of water which is pushing the plunger forward. Thus the pressure on both sides is equalized, and the pistons are prevented from striking the cylinder head. Of course, this device comes into play only when the load is suddenly released. Under ordinary conditions—that is, with ⅜ in. of clearance in the steam cylinder—the by-pass in the compensator will not open.

The machine here illustrated is a small one. In larger sizes, the d'Auria compressors are made compound, both in air and steam, and fitted with the most approved steam and air valves to ensure economy of steam. A d'Auria compressor of 3,000 cu. ft. capacity per minute,

*Abstract of paper read at the Richmond meeting of the American Institute of Mining Engineers, February, 1901.

compound in steam and air, with intercooler all complete, weighs about 46,000 lbs., occupies a floor space of 25 by 8 ft., requires no other foundation than a floor to support its weight, and does not need even to be bolted to the floor. A compressor of the crank and flywheel type, capable of doing equally efficient work, and of the same capacity, would occupy a floor space of about 56 by 18 ft., and its flywheel alone would weigh 45,000 lbs., the total weight of the machine being probably about 170,000 lbs.

Where space is a consideration the new type offers considerable advantages, occupying only one-fifth as much area as the former type. In weight, it is as 1 to 4, involving much saving in the cost of foundations, which is an important item. Moreover, it can be moved from place to place without any trouble, being, in the full sense of the word, a portable machine. No matter what its size, it will always start and stop promptly by opening or throttling the steam without any dead center.

The principles involved in the d'Auria compensator have been recognized and stated by Prof. Goodman, of Victoria University, Leeds, England, in his work on "Mechanics Applied to Engineering"; and the opinion of Mr. Charles A. Hague, a well-known American hydraulic engineer, is expressed concerning the pumping-engine (which involves the same principles) in the following extract from a letter addressed by him to me March 20th, 1900:

"It seems to me a most legitimate evolution and development of the Worthington duplex pump. . . . The peculiar features embodied in the relief of the auxiliary plungers at the stroke-ends, so as to make it possible to drive the engine boldly up to the finish of the stroke, and then stop the moving parts in a manner practically positive by the steam cushions, are admirable and effective features, providing for a uniform stroke without dash-relief adjustments. . . . The mechanical effect of the hydraulic balance is that of a swinging wheel, vibrating instead of revolving, but possessing important advantages over a rigid mass of metal; the water in the balancing column being more adaptable to the purpose at the critical instant of finishing the stroke, through the medium of the relief openings in the auxiliary plungers."

THE PAN-AMERICAN EXPOSITION AT BUFFALO.—I. THE NEW YORK STATE EXHIBIT.

Written for the Engineering and Mining Journal by Harriet C. Brown.

The mining exhibit at the Pan-American Exposition begins its career under most auspicious circumstances. With the exception of the Government Building, the Mines Pavilion was the only one of the main Exposition structures which was ready for critical inspection on May 1st, when the gates were thrown open to the public. A few last touches were still needed, but the exhibits were all in, and most of them were handsomely installed.

To Dr. David T. Day, superintendent of Mines and Metallurgy, is due the credit of having collected and arranged, in an incredibly short space of time, what is probably the most unique and complete mining exhibit ever displayed at any exposition. He has not only a scientific and practical knowledge of mines and minerals to guide him in his work; he is also an exposition expert and has gained at the great fairs of Chicago, Atlanta, Nashville, Omaha, Philadelphia and Paris, experience in the art of making exhibits. Although he did not reach Buffalo until the middle of March, so well did he handle men and materials after he arrived that his building was almost the first to be ready for visitors.

The Mines Building is situated at the southwestern end of the Esplanade. It is connected with the Horticulture Building by a curved colonnade which is used as a conservatory. On the other side of the Horticulture Building is a similar colonnade which terminates in the Graphic Arts Building, a structure that is similar in size and shape to the Mines Building.

The general outline of both is square. Four square corner towners and a deep portico formed by three connecting arches are the most characteristic features of the building in which the mining exhibits are housed. The interior decorations are simple and effective. Bare unsightly walls have been covered with maroon burlaps, a color which every mining expert who has studied exposition backgrounds knows is almost the only right one for all kinds of mineral specimens. On either side of a great glass skylight in the roof are stretched large panel paintings, 18 in all, representing the characteristic ore industries of the country. Over the entrance is an immense triangular painting contributed by Maryland, which depicts the "Genius of Geology Unveiling Mineral Wealth."

The building has a floor space of only 20,000 sq. ft., but on it and the surrounding walls are specimens of the mineral wealth of all the States in the Union, of Alaska, Cuba, Canada, Mexico, and the countries of Central and South America. The most important and striking exhibits are those of gold, silver, precious stones, platinum, copper, iron, coal, petroleum, marble, building stones, clay products, and petrified wood.

To the one who understands the value of what he sees the wealth of treasure in that little building is almost overwhelming at first sight. Even a hasty glance from the threshold reveals some of the choicest exhibits. Just inside the entrance is an imposing pyramid of fossil wood with its rich coloring; beyond that a large central case of North Carolina gems, and in the background, opposite the door, the exhibit of the Standard Oil Company. The exhibits of Cape Nome gold, of Arizona copper, and Missouri lead and zinc were others that left a pleasant, well-defined impression on the mind of the opening day visitor.

Of all the exhibits, none, however, was so complete in detail as the New York State exhibit, which is in charge of Arthur L. Parsons, of the State Museum at Albany. It occupies a conspicuous position to the right of the entrance and is enclosed in a space bounded by white Corinthian columns surmounted by Pan-American eagles. The exhibit is contained in 11 handsome cases grouped around a pyramid of clay products from all parts of the State. As the latter constitute New York's most important mining industry nowadays, it is proper that they should occupy the center of the stage. The front of the pyramid shows the natural clay products, such as fire clay, potter's clay, brick clay, and terra-cotta in 10-in. cubes, surmounted by an immense sectional sewer pipe which looks like a horseshoe. On the sides of this central pyramid samples of fire-brick are heaped up. Linings for furnaces and hollow fire-proofing are shown in addition to the ordinary brick and pressed brick in buff, gray, gold, red, pink, brown and mottled colors. Lifting his eyes from the bricks, the visitor sees on the wall opposite a painting illustrative of brick making at Haverstraw on the Hudson River.

Of all the samples shown, probably the rain-washed bricks are the most interesting. The story goes that before the bricks were burned, a rain descended and dimpled their smooth surfaces, so that the owner feared they were spoiled. He decided to burn them, however, hoping to sell them for at least half their original value. An architect came along, saw their possibilities as artistic material, and the result is that they now sell for twice what ordinary bricks do. They look very much like rough red building stones.

In a case in the exhibit, flake graphite from Ticonderoga is displayed as it looks in the ore, when crushed, and in pigment form. Two kinds of graphite paint are shown, Dixon's silica graphite paint and Dixon's smokestack and boiler front paint.

Mineral paints are well represented in the exhibit. A big piece of red hematite from Oneida County occupies a conspicuous place in one case. Near it is a piece of slate similar to that from which aluminum paint is made. The latter is much used in the manufacture of oil cloth and a piece of the same in the case is intended to convey that fact to the minds of visitors. Worthy of mention in the mineral paints exhibit are the bottles of liquid paint exhibited by the Clinton Metallic Paint Company. They received medals at the World's Fair and would win distinction anywhere.

A case of magnetite from Mineville in Essex County constitutes a unique collection of iron ore. Hematite of different colors is shown in some very fine specimens; brown hematite from Dutchess County and red fossil-bearing hematite from Clinton County are shown. Specimens of carbonate of iron from Burden, Columbia County, are interesting because of their history. For a long time it was regarded in the locality as nothing more than dirty limestone until Mr. Howard Burden set specialists to work to find this ore, and they located a bed of it 20 ft. thick.

A case of abrasives contains some beautiful specimens of garnet from Warren County and Essex County, used for making garnet and ruby paper. The paper itself is shown in all degrees of fineness. A large lump of corundum emery from Peekskill shows crystals of corundum on the surface. From White Lake in Herkimer County diatomaceous earth, valued as a polish for silver, has been sent in bottles to this exhibit of abrasives. A large mill-stone from Ulster County made out of Oneida conglomerate is the central feature of the case.

New York's famous mineral product, salt, is well exploited here. Although not so important as its building stone, its clay, or its iron products, salt takes high rank in New York's list, because of its antiquity as a State industry. Salt was first made in this State about 1795 near Syracuse. A large piece of white rock salt from Livonia in Livingston County and an equally large gray piece from Retsof in the same county show the appearance of salt when first taken from the earth. In glass bottles solar salt, ground alum salt, pretzel salt, butter salt, and common salt are exposed, illustrating every kind of coarse and fine crystallization.

New York State gypsum is here shown for the first time as material for plaster of paris and wall plaster. The best series of gypsum cubes is exhibited by the English Plaster Company. After the cubes, the crushed rock is shown in different grades and artificial colors. The specimens exhibited come from the counties that border on the Erie Canal. Gypsum has been largely used in the Exposition, for quantities of it were used to make the staff exterior of the buildings.

Tall slim bottles of crude petroleum are exhibited from Alleghany and Cattaraugus counties. The oil is black, green and red in color.

The case devoted to lime and cement contains well-selected specimens of quicklime, slaked lime, bleaching lime, agricultural lime, marl, and Portland cement. The last-named is shown in the mixture ready for burning, as clinkers, and finally as the finished product, crushed and ground.

A case of miscellaneous specimens contains gravel, shale used for making paving brick, tempering sand used in brick-making also, moulding sand for foundry purposes, fire sand, glass sand, kaolin used in the manufacture of pottery, feldspar and brown grit used for rubbing stones. Two bottles of powdered talc from the talc bed at Talcville in St. Lawrence County are valued samples. Some fine specimens of rose quartz from Bedford, Westchester County, used in the manufacture of pottery, contribute to the beauty of this case.

An attractive wall exhibit is made of roofing slates from Washington County. They are red, green, purple and variegated in color. Six specimens of fine flagstone from Ulster, Delaware, Chenango, and Orleans counties also decorate the wall.

The building stones are New York's piece de resistance. They are illustrated by about 50 cubes, 10 in. in size, of granite, marble, limestone and sandstone, all sides save one highly polished, and that left with a rock face. The granite is from Westchester and Essex counties mainly, the marble from Westchester and St. Lawrence, the limestone from the northern and eastern counties, the sandstone chiefly from the Adirondack region. The collection includes three beautiful samples of verdantique or serpentine marble from Jefferson and Essex counties.

Near the State exhibit is a private exhibit of quartz crystals made by A. B. Crim, of Middleville, Herkimer County, that are both beautiful and interesting. They are doubly-terminated crystals found in the calciferous sandstone of Middleville. The exhibit includes single crystals, twins, triplets, groups both smoky and clear, carbon, calcite, liquid and crystal inclusions, crystals in matrix, and rock sections showing the modes of occurrence.

The general public has an idea that New York State can have little

to exhibit in the way of mining products. It needs only a glance at the State's exhibit at the Pan-American Exposition to show how erroneous is such an impression.

THE GOLD-FIELDS OF THE WEST COAST OF AFRICA.

From Our Special Correspondent.

In this preliminary letter glittering generalities only will be mentioned. Axim has been the principal port for mining machinery, as the River Ankobrah is navigable certain seasons of the year for a distance of 40 miles in a straight line, though it is fully 80 miles with meanderings. Tradition states that the steamboat has been known to complete the single journey in 10 hours, but 48 hours is the regular time for the homeward trip, the river having a fall of about 300 ft. The Prestes Mine uses the river more largely than any other mine or company. Dixcove is the distributing center for a large section of agents for company promoters. Secondi will eventually be the distributing point, as it is from there the Cape Coast Government Railway starts, the objective point being Kumasi, 140 miles distant. There also the Government is building a pier, and contemplates an addition to the natural breakwater which already exists. Cape Coast Castle (population 14,000) is at present the rendezvous of the mining men who wish to see the Ashanti District, as the fields are nearer to that point, and carriers and labor are more plentiful. Accra (population about 25,000) is the capital of the West Coast and all business has to be transacted there. At the date of this writing but three surveyors have been licensed; the fees are £5, but no bond is exacted from the surveyor for the performance of good work. The client must see that he engages good men.

Secondi is a town of probably 1,500 natives (Fanti), perhaps 60 resident whites, the large majority of whom draw their salaries from the railway, and a floating white population of perhaps 10 to 20, waiting for boats or trains. There are no streets, but the tracks made by usage; the beach is often used, when the tide permits, otherwise one climbs the gradually sloping sandstone cliffs through or between the native huts as best one can. The old fort, built at the close of the 17th century by the Royal African Company, is now used as the district commissioner's court, the custom-house and post-office. This latter is a disgrace, a room less than 8 ft. square, in which three natives are engaged.

There are over 700 miles of telegraphs throughout the colony and messages are transmitted throughout at the rate of 12 words for 6d., as in Great Britain; the telegrams are sometimes delivered correctly, as the Government pay is inadequate for effective service. The telegraph poles throughout the Coast are 22 to the mile instead of 32 to the mile; the wires are often down. The poles are made of iron and such is the effect of the spray of the salt water that in one or two years the post is a mass of fret or embroidery work, whereas the stand buried in the sand is intact, the marks as legible as when first painted. It is amusing to see a pole tied by means of bark string to support the iron post, it reminds one of a pioneer farmer instead of a Government monopoly.

The railroad from Secondi to Tarkwa was completed according to London financial papers about the latter part of January last; it is not yet finished, but should be in good working order about June 1st next. The train runs three times a week from Secondi to Mansu, 16 miles; first-class fare being 3s. 6d.; second-class, 2s. 6d.; freight, £3 a ton. The train's schedule time is 6.15 a.m., but all goods must be delivered and all tickets purchased before 5 p.m. the preceding afternoon.

Saturday, March 16th, was a record day, as the railway company had to put on two trains, the first or regular train being filled with mining men and hundreds of natives, principally carriers. The Anglo-African Company took up 160 natives with ample provisions; Dajuris Concession a little less number; the Sullivan Machinery Company, of Chicago, had two large-size diamond drills, a 25 H.-P. engine, 2 boilers, houses, sheds, etc., also soda water—ad libitum—as the drill men are to be furnished aerated or mineral waters by the company. These drill men have been employed on the iron ranges of Minnesota and anticipate starting work next June; if so, it may be regarded as very good work, as the load of a carrier is 60 lbs. The original cost is usually a small item in machinery; 12-lb. rails, which cost in England about £7 a ton, cost £30 at the mine and other items in like proportion.

The railroad employs about 6,000 natives, 3,000 Kroo boys, 2,000 from Sierra Leone and 1,000 from Lagos. The Fantis do not believe in the pick and shovel, being good only for carriers. The gauge is 3 ft. The line has been four years in construction. The longest tangent is 1½ miles; at one place in that two trees form an arch fully 80 ft. above the line. The train travels from 8 to 10 miles an hour, when not off the track. At Mansu all passengers change, and through the courtesy of the manager or assistant manager may ride in, on the ballast cars, 12 miles further to a place known as Issuasa. From this latter point to Tarkwa is 12 miles, which has to be done on foot, usually on the railroad grade. The grading has certainly not been worked on the latest principle, baskets, wheelbarrows and small trucks being promiscuously used. The cost of the railway to date has been locally estimated at from £10,000 to £16,000 a mile. In London estimates are £14,000 a mile. There are but few cuttings, and those are in soft marl and shale with an occasional gneissic boulder. The bridges are unimportant. The bush or jungle is certainly as dense as can be; a small rabbit could not penetrate it. After 10 days in the bush I think that there were three different growths, which to-day are contemporaneous—first, the undergrowth, which grows from 15 to 25 ft; second, small trees, from 30 to 60 ft.; third, large trees from 60 ft. above. A surveyor told me in his preliminary survey he had to cut a tunnel for over ¼ mile. As a miner I would rather drive a level through soft ground than cut a trail through this undergrowth. No one need fear to lose himself in this bush, as it is impossible to get 6 in. away from the trail.

During the present year 1 oz. gold ore cannot be made to pay expenses, including development, but there is apparently a future before the miners, as the natives or Europeans have scratched the back of the lodes for miles; open cuts can be traced for miles, in one case I was told for 15 miles; and in some places all the quartz has been mined above "water level" or line of superficial alteration; huge boulders of quartz 5 to 6 tons weight can be seen close to the line of reef. There are large tracts of gold-bearing rock throughout the Coast, but the values to me are yet problematical. The vein matter is largely quartz, sometimes stained with iron oxide, and sometimes blackened by manganese. The quartz varies in color from dull milky to glassy. The mining and milling of a few years ago look as if they could be improved to-day, but perhaps the mining man of the present could not have done better with an impoverished treasury, unhealthy climate and general surroundings. It was the custom when the manager took his holiday to leave the accountant in charge, who in turn became manager. The milling at one of the mills was certainly a little "off color," as I saw two native women panning, and the amount of amalgam was such as to yield the present mine owners £1 a day. The native women were experts in the use of the pan, which was similar to the batea of South America.

Labor is not the best, neither is it the cheapest. Wages vary from 1s. to 2s. a day, and men are not plentiful at that. Native fitters get 7s. a day, and their handicraft would be amusing were it not for its utter uselessness and wholesale waste. My impression is that good white labor would be cheaper at 30s. a day. Transport is heavy. In the Tarkwa District freight is about £20 per ton or 2d. per lb.; in the gold-fields of Ashanti £47 per ton from Cape Coast Castle. Timber is very expensive, as only the hard woods are of service, and 8 by 8 sticks suitable for shaft purposes cost 5s. 3d. per lineal foot, or a shaft suitable for mining would cost £10 per foot for timber alone. The soft woods will not season, consequently are not durable. Mining timbers must be imported.

Reasons for stating that 1 oz. ore will not pay dividends on the Coast this year are: Cost of development will be high; native labor is sadly inefficient and, moreover, is scarce. Carriers are now almost impossible to secure, and are perfectly independent. It is stated that some prospecting parties will not be able to leave the Coast ports on account of lack of carriers. White labor must be paid and paid well. Entering into labor contracts for a term, even with Europeans, is most unsatisfactory to the manager. From 10 to 15 per cent. more officials are needed to do the same work here than in other places; not on account of holidays, but on account of sickness. One mine which employs eight officials loses on a rule 38 days a month. Government officials have 12 months' work, 6 months' holidays on full pay; they live largely on the Coast and have good bungalows. Miners must live in the dense bush and swamps in the interior without good bungalows, often tents only. The rapid growth of underbrush necessitates continual cutting. The heavy dews destroy machinery, belting, etc.; atmospheric changes forces depreciation charges abnormally. Lastly, my strongest reason is that scarcely a mine will be crushing this year, as, if a 50-stamp mill can be erected and at work 18 months after ordered, it is most satisfactory.

My impression is that with depth the water charges will be heavy, as all the valleys are full of water. There is no chance for a good drainage tunnel, as the hills are largely cone shaped, varying in height from 200 to 500 ft., and therefore comparatively of small area.

The veins in a given district should be thoroughly tested by shafts, drives, diamond drill holes, etc., and if prospects warrant a large central electric-power plant should be put up on the Ankobrah River, where ample water would be available for eight months of the year and the plant could rest four.

At Secondi it was my misfortune to attend the funeral of a mining man, a Mr. Hall from Queensland, who had been here a week or two. About 12 Europeans headed the procession, then followed 60 native children in couples, singing hymns right to the grave side. A layman read the service.

RECENT DECISIONS AFFECTING THE MINING INDUSTRIES.

Specially Reported for the Engineering and Mining Journal.

DUTY ON LAVA ROCK.—Lava rock is a building stone, and when hewn is dutiable at the rate of 50 per cent. ad valorem under the provisions of paragraph 118, act of July 24th, 1897.—Appeal of the Giant Powder Company from Collector of Customs at San Francisco; Board of General Appraisers.

DUTY ON ABRASIVES AND CLAY.—Polishing powders composed wholly or in chief value of earthy or mineral substances silenium in sticks, bath bricks, Putz pomade, Putz extract, and modeling clay composed in chief value of earthy substance, are not dutiable under paragraph 97, act of 1897, but are duitable as non-enumerated manufactured articles, under section 6 of said act, at 20 per cent. ad valorem.—Appeal of Strauss & Co. from Collector of Customs at New York; Board of General Appraisers.

DUTY ON "RED CHALK."—Merchandise of a red color, in lumps of irregular shape, imported from St. John, New Brunswick, valued at about 8c. per pound and used chiefly in marking timber or lumber, which the Government chemist reports consists of clay covered by iron sesquioxide, is not the "chalk" of commerce provided for in paragraphs 13 and 519 of the present tariff act, which latter is white or grayish white and is a carbonate of lime or natural form of calcium carbonate largely used in medicinal preparations and toilet articles.—Appeal of Schwartz & Sons from Collector of Customs at Bangor, Me.; Board of General Appraisers.

DRAWBACK ON WIRE NAILS EXPORTED.—On the exportation of steel wire nails manufactured by the American Steel and Wire Company (Allentown mill), with the use wholly of steel billets purchased from the Maryland Steel Company, of Sparrow Point, Md., the said billets having been manufactured under the provisions of Treasury decision 22,890, in part from imported and in part from domestic materials, a drawback will be allowed equal in amount to the duties paid

on the imported materials used, less the legal deduction of 1 per cent. —Circular of United States Treasury Department.

PROPOSITION ONLY BECOMES BINDING ON ACCEPTANCE.—A party proposed that if another would purchase certain mining claims through one A and procure a conveyance to himself or to A to be held in trust for the others, then in that event such other party should have a certain interest in all claims that might be thereafter located by the proposer; but no time was fixed within which such claims should be bought, or within which he should commence to locate the claims. The court held that the acceptance of the proposition by A, who had not been consulted when it was made, was essential to give it the effect of a contract, hence the one to whom the proposition was made was not entitled to any interest in a claim located by the proposer before A consented to make the purchase.—Rannahan vs. Gibbons (62 Pacific Reporter, 773); Supreme Court of Washington.

THE JEFFREY CENTURY BELT CONVEYOR FOR HANDLING ORE.

The accompanying illustrations show the Jeffrey "Century" belt conveyors furnished the Arminius Chemical Company of Mineral, Virginia, by the Jeffrey Manufacturing Company of Columbus, Ohio. Fig. 1 shows a special conveyor used in connection with the jig washer. This conveyor has special carriers which are adjustable so that the belt can be made concave or convex to suit the condition of the material to allow the water to drain off. This special conveyor delivers the ore upon the storage conveyor, which is about 200 ft. long, more fully shown in Fig. 2. The storage conveyor is provided with a traveling tripper, which delivers the material at any point and at either side along the run.

The "Century" belt used in this conveyor is manufactured especially for this work, its carrying sides being reinforced with an extra thickness of rubber of such a composition as will best resist wear and tear, while it is supported on special iron troughing carriers which are self-oiling, one oiling lasting for months.

FIG. 1.

FIG. 2.

JEFFREY CENTURY BELT CONVEYOR.

COAL IN POLAND.—The production of coal in Russian Poland for the year 1900 is reported at 4,028,665 metric tons, and of lignite 94,936 tons; a total of 4,123,601 tons. In 1899 the total was 3,974,822 tons. The increase last year was only 148,779 tons, or 3.7 per cent.

ELECTRIC RAILROAD DEVELOPMENT IN GERMANY.—United States Consul-General Richard Guenther, of Frankfort, Germany, reports under date of January 14th, that the railway of the future was the subject of discussion at an audience which Privy Councillor Rathenau, superintendent of the works of the General Electricity Company (Allgemeine Electrizitäts-Gesellschaft), has recently had with the Emperor. The Emperor expressed himself as being in favor of a complete change of the entire railway service. Electrical power must be used for the transportation of passengers, though for the present it will be necessary to continue the use of steam for moving freight. Mr. Rathenau gave the Emperor detailed information emphasizing the necessity of constructing electrical railways for direct and rapid connection between Berlin and the principal cities of the German Empire. He added that it would be a great national triumph if Germany could be the leader in the creation of this most modern means of transportation.

For the purpose of furthering this project, a number of prominent industrial and banking firms formed some time ago a society for investigation, the presidency of which has been accepted by Dr. Schulz, president of the Imperial Railway Department. The deliberations of this society will probably result in the opening for traffic during the current year of an electric railway which the Secretary of War has placed at the disposal of the society, namely, the military line from Berlin to Zossen. It is hoped that a speed of from 125 to 155 miles per hour can be attained with cars, of which one will be built by the General Electricity Company and one by Siemens & Halske. These cars will each accommodate 50 passengers and will look very much like the sleeping cars now in use.

ABSTRACTS OF OFFICIAL REPORTS.

Osceola Consolidated Mining Company, Michigan.

This company's report for the year ending December 31st, 1900, shows total receipts from sale of copper, interest, etc., of $2,108,253. The total costs were $1,559,530, leaving a surplus of $576,715, from which dividends amounting to $571,200, or $6 per share, were paid, leaving a surplus of $5,515 for the year. The company has also a special construction account, the statement of which for the year is as follows: Balance from previous year, $121; sale of treasury stock, $188,012; sale of land to Centennial Copper Mining Company, $20,000; total, $208,133. Payments on this account were: New stamp mill, $89,405; Nos. 1 and 2 shafts at South Kearsarge, $99,562; total, $188,967, leaving an available balance of $19,165. The total balance of assets at the close of the year was $571,427.

The superintendent's report shows 836,372 tons of rock mined; 683,066 tons stamped; 17,166,715 lbs. mineral recovered. The report does not state the quantity of copper produced. The cost of stamping rock was 27.2c. per ton. Development work included 1,862 ft. shaft sinking and 16,690 ft. drifting and opening; a total of 18,552 ft.

The directors' report says: "In addition to what has been spent on the new stamp mill and equipment at South Kearsarge, the following costs of additional construction have been met through the regular operating expenses: Osceola Branch, $45,583; Tamarack Junction Branch, $548; sinking No. 3 Shaft and sundry construction at Kearsarge Branch, $42,433; total, $88,564.

"During the past year the operations of the company have been very largely in developing the old Osceola Mine, sinking a new shaft at the old Kearsarge, opening an entirely new mine at the South Kearsarge and increasing surface plant to provide means for treating a large increase of ore from the various mines of the company. All of the new development work has proved very satisfactory at each of the mines. During the first 10 months of 1900 the ore from the Osceola Shafts 5 and 6 was of a lower grade than during 1899, but since October last it has decidedly improved.

"Our stamp mill capacity now consists of 6 heads of stamps in the old mill and 3 heads in the new mill. It is proposed to put up an additional building during the year capable of holding four heads of stamps, but to erect only three heads at this time. This is expected to be in operation the last of the year. It will then be in shape to handle a large quantity of material at a low cost, and the openings have been so pushed in the different mines that they will be able to supply the necessary rock at that time.

"It has taken time, patience and money to provide such an extensive equipment, and it will take practically the rest of the year to finish it, but we consider that the only economical way to handle low-grade rock is through the treatment of a large daily tonnage; and the results for 1902 will, we trust, through reduced costs, prove the wisdom of the course that has been adopted. There is remaining in the treasury 4,000 shares of stock which are not included in the statement of assets."

Lehigh Coal & Navigation Company.

This company owns a large estate in the anthracite coal region of Pennsylvania. It owns the Lehigh Canal; railroad lines connecting with several of its collieries; and also the Lehigh & Susquehanna Railroad, that line, however, being leased to the Central Railroad Company of New Jersey. The report is for the year ending December 31st, 1900.

The receipts for the year were as follows: Lehigh coal lands, $500,462; railroads, $72,542; canal, $10,734; miscellaneous, $186,339; rental of Lehigh & Susquehanna Railroad, $1,853,632; total, $2,623,709. The charges were: Working expenses and rentals, $481,849; interest, $835,951; sinking fund, 5c. per ton of coal mined, $97,576; depreciation, $100,000; total, $1,515,376, leaving a net balance of $1,108,333. From this dividends amounting to $789,066, or 5½ per cent. on the stock, were paid, leaving a surplus of $319,267 for the year.

The gross earnings of the Lehigh & Susquehanna Railroad, as reported by the lessee, were $5,560,897, an increase of $151,008, or 2.8 per cent. over those of 1899. The total coal tonnage of the road was 6,154,835 tons, an increase of $27,530 tons, or 0.4 per cent.

The report says: "The production of coal from the company's prop-

erty, including that used by the company in its mining operations, was 2,098,890 tons, as compared with 1,807,733 tons in 1899, an increase of 291,157 tons. The total shipments and local sales amounted to 1,951,527 tons, the company having consumed in its mining operations 147,363 tons, consisting chiefly of the poorer grades of coal, or 7 per cent. of its production. The production per day was 7,955 tons, which was 173 tons greater than 1899. The average working time of all the collieries was 213.55 days, an increase of 23.55 days over 1899. The average cost of coal was $1.257 per ton, as compared with $1.282 last year, a decrease of 2.5 cents per ton. This is the lowest cost at which coal has been produced by this company.

"The cost of mining at the collieries owned by the company, based on the production of all sizes, exclusive of the coal used by the company in its mining operations, and including, in addition to the regular mining expenses, all charges for extraordinary improvements, consisting of one new breaker, two new shafts, expenses of extinguishing fires, coal dirt dams, dredging machinery, etc., was $1.421 per ton.

"The percentage of small coal produced during the year shows a slight increase over the previous year, the total mined amounting to 50.8 per cent. of the production, made up of the junior sizes as follows: Pea, 14.13 per cent.; buckwheat, 16.43; buckwheat No. 2, or rice, 20.33; total, 50.80 per cent. The percentage is unusually high in anthracite mining operations, and is due in the case of this company largely to the extreme care taken in saving this fine coal in the course of preparation, and in order to realize its market value, and to secure its transportation on the lines of railroad."

The report refers at length to the strike in the anthracite region, during which the company's men remained at work. In recognition of this the company has contributed $25,000 to the benevolent fund maintained by its employees.

MINERAL COLLECTORS' AND PROSPECTORS' COLUMN.

(We shall be pleased to receive specimens of ores and minerals, and to describe and classify them, as far as possible. We shall be pleased to receive descriptions of minerals, and correspondence relating to them. Photographs of unusual specimens, crystals, nuggets and the like, will be reproduced whenever possible. Specimens should be of moderate size, and should be sent prepaid. We cannot undertake to return them. If analyses are wanted, we will turn specimens over to a competent assayer, should our correspondent instruct us to do so, and send the necessary money.—Editor E. & M. J.)

342.—Some handsome specimens of silver chloride were recently taken from the Hagerman Shaft at Leadville, Colo. The mineral was a bright one and was embedded in a body of snow-white talc, making very showy specimens.

343.—Feldspar Crystals from Cripple Creek.—Crystals of feldspar collected by Dr. Whitman Cross are described in the "American Journal of Science" by C. H. Warren. They occur in considerable number imbedded in a rather soft light-gray rock, apparently of phonolitic character, but of unknown nature, as it has not been studied with the microscope. The rock is apparently much altered and occurs as a narrow dike cutting the andesitic breccia of Raven Hill on its eastern slope above the Moore Mine. The feldspar crystals, which vary in size from 5 mm. long and 3 mm. wide, to 155 mm. long, 10 mm. wide and 8 mm. thick, are light gray in color, like the matrix and have undergone some alteration on the surface. Carlsbad twins are common. In a large number of instances the crystals form peculiar aggregates, several crystals sometimes penetrating through each other.

QUESTIONS AND ANSWERS.

(Queries should relate to matters within our special province, such as mining, metallurgy, chemistry, geology, etc.; preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot give professional advice, which should be obtained from a consulting expert. Nor can we give advice about mining companies or mining stock. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers must send their names and addresses. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Paraffin.—What is the main source of paraffin in the United States?—P. F.

Answer.—The paraffin used in the United States is mainly derived from the distillation of petroleum.

Canadian Nickel Ore.—What percentage of nickel do the Canadian nickel ores carry?—S. E. M.

Answer.—The proportion of nickel found in the Canadian ores will not vary far from 3 per cent.

Tin.—What is the value of the tin consumed in the United States yearly?—S. E. M.

Answer.—In the year 1900 there were 69,068,568 lbs. tin imported into this country. The average price of tin in New York for the year was 29.9c. per pound, which would make the value of the tin $20,651,502.

Yellow Ocher.—Does the value of an ocher, whether washed or unwashed, depend on the amount of iron it may contain? What per cent. of iron is contained in the best ocher?—A. G. J.

Answer.—Experts inform us that although yellow is not exclusively the color of ocher deposits, it is the yellow mineral which is most commonly referred to as ocher. The market value is not entirely controlled by the percentage of iron that it contains; the shade of color is a very important item, and other things being equal, one shade will command a better price than another. Some very strong ochers are found in this country, and analyze at least 67 per cent. of oxide of iron; but the color is so dark, probably because of a slight percentage of manganese, that the ocher, while possibly the very strongest in the market, is only salable for special purposes, where the color is not much of a factor. The light and golden shades of ocher command a better price; the percentage of oxide of iron in the ochers offered in the market runs from 14 up to perhaps 70 per cent., and of course it stands to reason the lower strengths could not compete in the market with that which contains the higher figures; though, as said before, the shade of color is an important factor in deciding the market value.

Sink Holes.—Can you tell me how the blow holes or sink holes scattered through a part of Missouri were formed? Are they connected with mineral deposits and do they indicate the presence of mineral?—J. M. B.

Answer.—Sink holes or blow holes are of common occurrence in most countries underlaid by limestone. They are formed by the action of surface waters containing carbonic or other acids, these acids being usually derived from decaying organic matter. Such acid-charged water descending to the drainage level of the country through minute crevices, dissolves the limestone, thus forming openings or sink holes of considerable size. The underground work of the water is to form caverns often of large size connecting with the sink holes. A blow hole indicates a connection with some cave. A sink hole does not necessarily indicate mineral deposits of value, though it may in certain districts when the limestone contains deposits of metallic compounds which have been redeposited by the underground water. There are large areas in the United States full of sink holes, but containing no metalliferous deposits of value. For further information on caves see Geikie's "Class Book of Geology," price $1.10, or Brigham's "Text Book of Geology," price $1.40.

IRON ORE IMPORTS.—Imports of iron ore into the United States in March were 47,379 long tons, against 95,215 tons in March, 1900. The decrease was 47,836 tons, or 50.3 per cent.

BELGIAN PIG IRON PRODUCTION.—The output of pig iron from Belgian blast furnaces during the three months ending with March last comprised 56,550 tons of forge pig, 19,800 tons of foundry pig and 127,300 tons of steel pig; a total of 203,650 tons, as contrasted with 288,900 tons in the first three months of 1900. The decline is spread over all qualities, but was principally in steel pig.

LAKE SUPERIOR TRAFFIC.—Lake navigation opens late this year, and the movement of traffic has been delayed by an ice blockade in the St. Clair River and a strike of the engineers. Up to May 1st only 104 vessels had passed through the Sault Ste. Marie Canals, and the movement of freight amounted only to 2,545 tons. In 1900, up to the corresponding date, the total was 473,482 tons.

SAMARIUM CARBIDE.—In a recent number of "Comptes Rendus" there was published a communication from M. Moissan on samarium carbide. This is another carbide giving acetylene, the yield through decomposition with water being 70 to 71 per cent. of acetylene, 7.5 to 8 per cent. of carburetted hydrogens of the acetylene series, and 20.7 to 22.3 per cent. of hydrogen and carburetted hydrogen of the methyl series.

PIG IRON PRODUCTION IN GERMANY.—The German Iron and Steel Union reports the production of the German blast furnaces in March at 672,595 metric tons, a decrease of 29,955 tons as compared with March, 1900. For the three months ending March 31st the production was, in metric tons:

	1900. Tons.	1900. Per ct.	1901. Tons.	1901. Per ct.	Changes, Tons.
Foundry iron	366,615	18.6	384,808	19.3	I. 18,193
Forge irons	394,807	20.0	388,270	19.5	D. 6,537
Bessemer pig	110,324	5.6	115,689	5.8	I. 5,365
Thomas (basic) pig	1,102,123	55.8	1,103,248	55.4	I. 1,125
Totals	1,973,869	100.0	1,992,015	100.0	I. 18,146

The increase this year was a little under 1 per cent. The gain was in foundry iron chiefly, though there was also a small increase in bessemer pig.

MINERAL IMPORTS AND EXPORTS OF SPAIN.—Imports of fuel into Spain for the three months ending March 31st included 536,749 tons coal and 39,500 tons of coke. Imports of metals were 2,926 tons pig iron, 1,408 tons wrought iron, 9,947 tons steel and 409 tons tin-plates. Exports of minerals are reported by the "Revista Minera" as below, in metric tons:

	1900.	1901.	Changes.	Per ct.
Iron ore	1,921,630	1,683,122	D. 238,508	12.4
Copper ore	239,347	216,555	D. 22,792	9.5
Zinc ore	19,443	18,641	D. 802	4.1
Lead ore	848	713	D. 135	15.9
Salt	41,985	71,259	I. 29,274	69.7

Exports of metals included 2,053 tons pig iron, against 7,474 tons in the corresponding period of 1900; 4,006 tons copper, against 7,267 tons; 29,327 tons lead, against 36,594 tons last year.

PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects, issued by the United State Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending April 30th, 1901.

672,882. PURIFYING SYSTEM FOR CRUDE PETROLEUM. Cal M. Aukerman, Risingsun, Ohio. The combination with a receiving-tank of a heating-coil connected at one end to the lower portion of the tank by branch pipes, one branch tapping the tank below the normal water-level, and another branch above the normal sediment-level, the opposite end of the coil being connected with the top portion of the tank by a pipe having its opening within the tank below the normal oil-level.

672,885. SURVEYING INSTRUMENT. Christian L. Berger, Boston, Mass. A camera surveying instrument comprising a support, a table thereon, means to tilt said table for proper horizontal alignment, Y's

carried by said table, a rigid camera-body supported in said Y's, means to rotate said body in said Y's, said body being provided with a wall immovable relatively to the body, an object-lens supported thereby, said body extending rigidly back from said lens and being provided at its rear end with plate-receiving mechanism for holding a sensitive plate accurately at a fixed unvarying distance from the lens and in proper central alignment with the axis thereof.

672,886. EQUATORIAL ADAPTER FOR TRANSITS. Christian L. Berger, Boston, Mass. In a surveying instrument having a main telescope and an auxiliary telescope, means for adjusting said auxiliary telescope laterally in a plane parallel to the plane including the main telescope and its lateral axis.

672,913. ELECTROLYTIC CURRENT RECTIFIER AND CONDENSER. Charles Pollak, Frankfort-on-the-Main, Germany. An electrolytic transforming or condensing cell having an electrolyte containing a free organic acid.

672,948. APPARATUS FOR MAKING BOTTOM-CAST INGOTS. Adolphus J. Lustig, Newark, N. Y., assignor of two-fifths to Isaac Lehman, same place, and Louis Kahn, New York, N. Y. The combination, with an ingot mold for bottom casting, of a base and a mold-supporting means, runners embedded in said supporting means, the said runners or conductors being made of a porous material, means for conducting a non-oxygenous gas into said base, and means for conducting the gas from said base to said runners or conductors.

672,981. SEPARATOR. Robert W. Jessup, San Francisco, Cal., assignor to Fairfax H. Wheelan, same place. In a separator, the combination of an endless perforated screen, the working face of which travels continuously in one direction, and a stationary table beneath the working face of said screen and so arranged relatively to the screen as to prevent the passage of material through that portion of the screen above the table.

672,991. EXPLOSIVE. Sergey D. Smolianinoff, Washington, D. C. An explosive compound composed of nitroglycerine, empyreumatic oil and oil of mirbane.

673,060. HOISTING-BUCKET. Thomas J. Pratt, Paterson, N. J., assignor to James A. Morrisse, same place. A bucket having four walls, and an automatically-closing spring-actuated bottom having upturned sides forming a chute through which the contents of a bucket may be delivered, and a locking mechanism to keep said bottom closed.

673,073. RECEPTACLE FOR CONTAINING LIQUID AIR OR OTHER GASES. Gabriel A. Bobrick, Los Angeles, Cal. A containing vessel in combination with a series of concentric chambers or compartments completely surrounding the same, some of which compartments are connected in series with the containing vessel to form a passage for the escape of expanding air or gas, the other and intermediate compartments being inert.

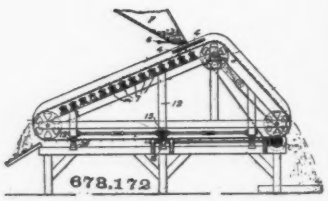
673,104. ROCK-DRILL. Warren Wood, Paterson, N. J. In a rock-drill, the combination of a cylinder having guide-lugs, a top head and its guide-lugs, side rods extending through the lugs of each, a cross-piece mounted on said top head and engaging said side rods, and means for locking said cross-piece and top head against movement relatively to each other, and means serving with said side rods to hold said cross-piece and top head to said cylinder.

673,126. MANUFACTURE OF SILVER-COATED ALUMINUM PLATES. Edouard Martin, Paris, France. The process consists in cleaning an ingot of aluminum, polishing it with pumice-stone, laying a thin galvanic deposit of copper upon its surface as described, heating and softly rolling the same, laying a galvanic deposit of silver upon the surface so formed, heating the plates so formed, placing upon said plates sheets of silver obtained by galvanic deposit, as set forth, and heated as specified, and lastly heating and rolling the whole, until a complete welding of the different plates is effected.

673,151. CABLE-CONVEYOR. Domingo Aramburu, Mexico, Mexico. A conveyor consisting of a series of sections arranged to receive the material successively, each section comprising two endless cables extending side by side and arranged to move with the load, the distance between companion cables being alternately greater and smaller in neighboring conveyor-sections, so that wide conveyor-sections alternate with narrow conveyor-sections, both ends of the cable-runs of a wider section being located side by side with and exteriorly of the ends of the cable-runs of the adjacent narrower sections so as to embrace said ends between them, and pulleys engaged by said cables.

673,171. APPARATUS FOR EXTRACTING TAR FROM COAL GAS. Frederick J. Mayer, Baltimore, Md. A washer comprising a shell, a perforated plate supported within the shell having a central opening, an open-bottom dome situated within the central opening having an inlet for the unwashed gas which inlet is elevated above the said plate, combined with a second and imperforate plate having in the center thereof a perforated hood the lower edge of which is serrated and extends below the supporting-plate, and sprayers within the said hood adapted to cleanse the inner surface of the same.

673,174. FURNACE FOR ROASTING ORES. Andrew P. O'Brien, Richmond, Va. A downwardly-tapering shaft revolubly mounted in the furnace and passing through the central holes of the hearts, the said shaft being provided with flanges, and alternating hearths with



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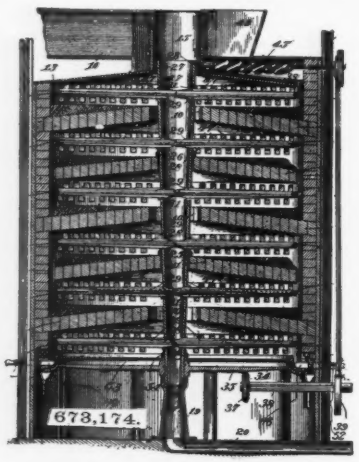
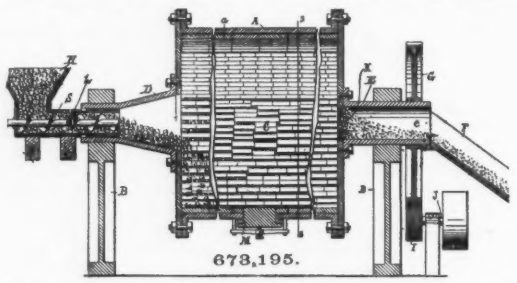


673,174.

corresponding flanges for forming sealing means, the size of the holes and the flanges of the shafts being relatively proportioned so that the shaft may be withdrawn from the furnace through the holes in the several hearths.

673,172. MAGNETIC SEPARATOR. Robert McKnight, New York, N. Y. The combination of an upwardly-traveling belt presenting an extended inclined surface provided with a series of projections of magnetizable material, ore and water feeds for the material near the top of the inclined portion of the belt, and means for magnetizing the projections, said belt being adapted to subject the material to a prolonged washing operation, and the projections being adapted to create eddies in the downflowing current, and attract the magnetic portions of the ore, and carry the same over the upper end of the incline.

673,195. APPARATUS FOR PULVERIZING ORES. Joseph K. Clark, Butte, Mont. In an apparatus for pulverizing minerals and other substances, the combination of a pulverizing-receptacle, means for agitating the same, free comminuting devices presenting plane surfaces which are adapted during the motion of the cylinder to come



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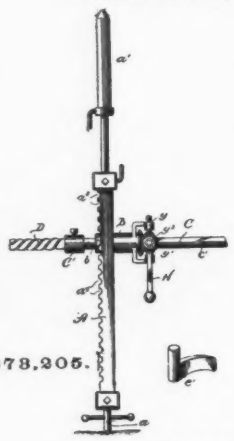
into grinding coaction, an inlet to the receptacle for feeding ore below the level of the comminuting devices and an outlet for the comminuted ore at a higher level than the immediate entrance of the coarse ore to the drum whereby the discharge of the comminuted ore is effected by the upward displacement of the coarse ore introduced.

673,205. COAL DRILL. Martin Hardscog, Ottumwa, Iowa. The combination of a box or sleeve having a smooth interior or bore, a drill-feed shaft passing through the box or sleeve, a longitudinal groove in the exterior of the shaft, a spiral groove in the exterior of the shaft, narrow in cross-section and wide-spaced apart with the body of the shaft for the wide spaces between the spiral of full diameter, leaving the exterior of the shaft practically a continuous smooth



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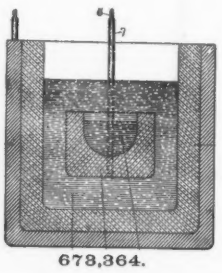

673,364.

face to slide in the smooth interior or bore of the box or sleeve, a driving-gear journaled in the end of the box or sleeve and having a pin or stud engaging with the longitudinal groove of the shaft for rotating the shaft, a feeding-gear nested within and independent of the driving-gear for rotating the shaft and having a curved wing engaging the spiral groove of the shaft to advance and recede the shaft according to the direction of rotation of the gear, and a sleeve or collar engaging the gear having the curved wing and carried by the box or sleeve.

673,231. CONTINUOUS-BURNING KILN FOR BRICKS OR OTHER ARTICLES. Adam Adams, Old Fletton, England. In a continuous-burning kiln, the combination of a series of ovens or chambers, with passages and valves.

673,237. ROLLING-MILL. Clarence R. Britton and Washington I. Ludlow, Cleveland, Ohio; said Ludlow assignor to said Britton; Carrie M. Britton executrix of said Clarence R. Britton, deceased. The combination with a pair of rolls, of feed-tables on opposite sides thereof and connected together, said tables being of less width than the length of the working face of the rolls and being movable longitudinally of the roll-body and to and from the bite of the rolls.

673,244. CENTRIFUGAL FAN OR PUMP. Samuel C. Davidson, Belfast, Ireland. A centrifugal fan or pump, the rotary member of which has blades arranged in substantially drum form, said blades forming ports between them for the outflow of the fluid and the blades in effect thickened toward their outer sides to reduce the exterior sides of the ports to less width than their interior sides.

673,275. COMPOSITION OF MATTER FOR STREET-PAVING OR OTHER PURPOSES. Charles R. Long, John S. Miller and William F. Ingram, Louisville, Ky. A hardening composition for incorporation with natural rock-asphalt, or other natural asphalt, having, in combination, a magnesian mineral and terra-alba.

673,325. APPARATUS FOR DETERMINING HEATING CAPACITY OF COMBUSTIBLES. Samuel W. Parr, Urbana, Ill. The combination, with a cartridge having a head provided with a valve-seat, of a spring-controlled hollow rod working through the said head, and a valve on the rod to fit the seat.

673,328. SALT-MIXTURE FOR EXPLOSIVES. Jean V. Skoglund, Bayonne, N. J. The method of manufacturing a salt mixture, consisting in first dissolving sodium nitrate and ammonium sulphate in water, then causing it to crystallize, then separating the crystals from the mother-liquid, then adding a compound able to precipitate sulphuric acid as a sulphate, then separating the precipitated sulphate, and then removing the water from the mother-liquor.

673,347. METHOD OF MANUFACTURING EXPLOSIVES. Harvey W. Wiley, Washington, D. C., assignor to the Marsden Company, Philadelphia, Pa. In the manufacture of dynamite, cominuting vegetable pith, saturating the same with a solution of nitrogylcerine in volatile liquid and then removing the latter by evaporation.

673,364. PROCESS FOR THE PURIFICATION OF ALUMINUM. William Hoopes, New Kensington, Pa., assignor to the Pittsburg Reduction Company, same place. The method consists in passing an electric current from an anode composed of impure aluminum in a melted state to a suitable cathode through a bath capable during electrolysis of dissolving the aluminum of the anode.

PERSONAL.

Mr. N. S. Clarke, the well-known mining man of Mount Sicker, B. C., has been in Victoria.

Mr. J. E. Beveridge, of Salt Lake City, Utah, has been in Mexico examining mines for Eastern men.

Mr. Hiram Donkin will leave Glace Bay, C. B., in about 10 days to reside permanently at Antigonish.

Mr. Geo. Icard, formerly of Rough and Ready, Nevada County, Cal., is now gold mining in Benguet Province, Philippine Islands.

Messrs. T. C. Woodworth, a San Francisco mining engineer, and Frederick Taylor, of Boston, are visiting the Michigan copper mines.

Mr. Edward S. Grierson will succeed the late Col. Preston C. F. West as chief engineer of the Calumet & Hecla Company at Calumet, Mich.

Mr. Dan Macdougall, engineer for the Dominion Iron and Steel Company at Sydney, C. B., has been made construction inspector for that company.

Mr. H. D. Wheeler, who is interested in the Seven Day Mine at McMillan, Tenn., has been in Joplin, Mo., where he investigated the machinery used.

Mr. Jacob E. Bamberger has been elected president of the Daly-West Mining Company, Park City, Utah, taking the place of the late Mr. R. C. Chambers.

Mr. William Oxnam has been appointed superintendent of the Bully Hill copper mines of Capt. J. R. De La Mar, in Shasta County, Cal., to take effect June 1st.

Mr. John Truscott, formerly superintendent of the Oneida Mine, Sutter Creek, Cal., has accepted the superintendency of the Bunker Hill Mine, near Amador City, Cal.

Mr. J. A. Ede, mining engineer for J. Dunraven Young, Chicago, is examining coal mining property at Pontiac, Ill. Mr. Young is about to examine a gold mine in Mexico.

Mr. J. A. Kirbey, superintendent of the Daly-West, at Park City, Utah, has been appointed to similar position with the Diamond Consolidated, at Tintic, in the same State.

Mr. A. Knauer, of Knauer, Schultz & Company, of Essen, Germany, and Mr. E. Blass, a civil engineer of the same city, are in this country studying industrial enterprises.

Mr. Frank Botsford, of the engineering force at the Redridge dam, Houghton County, Mich., has resigned his position and will enter the employ of the Elba Iron Mining Company, of McKinley, Minn.

Mr. John Hanley, mine manager for the Chicago-Virden Coal Company at Virden, Ill., has resigned to accept a similar position with the Jones & Adams Company, at Springfield, Ill., at its Empire Mine.

Mr. Archer Brown, of Archer Brown & Company, has been in the Birmingham, Ala., district. Mr. Brown is a director in the Tennessee Coal, Iron and Railroad Company and has other interests in Alabama.

Mr. Cornelius Shields, the new general manager and vice-president of the Dominion Coal Company, arrived at Sydney, May 6th. He was accompanied by Mr. Coyne, who will hold an important position with the company.

Mr. James Gayley, vice-president of the United States Steel Corporation, has appointed Mr. David G. Kerr, of the Carnegie Steel Company, head of the ore department of the United States Steel Corporation for the Pittsburg District.

Mr. S. D. Warriner, for the past 5 years superintendent of the Calumet & Hecla Company, has resigned to accept the position of general manager of the Lehigh Valley Coal Company at Wilkes-Barre, Pa., succeeding Mr. W. A. Lathrop.

Mr. H. F. J. Porter, formerly manager of the Chicago office of the Bethlehem Steel Company, and more recently located at the works at South Bethlehem, has been appointed New York sales agent of the company, with headquarters at 100 Broadway.

Mr. R. Maitland Brereton, a venerable mining and railway engineer, formerly of London, Eng., and at one time manager of the Richmond Consolidated Mining Company, at Eureka, Nev., but with present headquarters at Portland, Ore., is visiting Republic, Wash.

A party of Minnesota men, consisting of Meesrs. Alex Clark, F. Weyerhauser, E. W. Durant, Jr., W. H. Laird, Cuyler Adams, R. L. McConichay, C. R. Musser, Alex Blackwell, D. A. Mange, William Sauntry and A. E. Maesting lately visited the copper mines of Upper Michigan.

Mr. Francis T. Freeland, manager of the Durant and other mines in Aspen, Colo., has been, in addition to these duties, appointed manager of the Smuggler mines of the same locality, in place of Mr. S. I. Hallett, who recently resigned to take charge of the Silver Lake properties near Silverton.

Mr. C. Phair, Mining Recorder, at Lillooet, B. C., has been appointed Gold Commissioner for Lillooet mining division. Mr. F. Soues, government agent at Clinton, has held this office for many years, but as most of the mining in the district is now done near Lillooet, the office will be there.

Mr. W. L. Sims, general manager and treasurer of the Empire Iron and Steel Company, with headquarters in Catasauqua, Pa., and New York City, has been spending several days in the Birmingham, Ala., district. Mr. Sims formerly lived in the Birmingham section and has many friends in Alabama.

Mr. Paschal Shook, formerly assistant superintendent at the Ensley, Ala., steel plant, and Mr. J. F. Fletcher, Jr., formerly secretary and assistant treasurer of the Tennessee Coal, Iron and Railroad Company, have formed a partnership and will establish a pig iron brokerage firm in Birmingham, Ala.

Mr. D. Martin, of Seattle, Wash., has returned from the Philippine Islands, where he went to examine a copper proposition for Western men and is going to Alaska. He was engineer for the Canadian Development Company at Dawson last year and the year previous was with the North American Transportation and Trading Company.

Dr. R. A. F. Penrose is to make a trip around the world to visit mines and mineral deposits. He intends to visit first the old Cornish tin mines and the chief mineral localities of England. Thence he will go to Sweden, and afterward visit Russia, Siberia and the gold and diamond fields of South Africa and possibly Burmah and Ceylon, returning to California after a year or more.

Governor Otero, of New Mexico, has appointed the following delegates to the International Mining Congress, at Boise, Idaho, on July 23d, 24th and 25th: A. R. Graham and M. W. Porterfield, of Silver City; J. B. Gilchrist and A. G. Hood, of Fierro; W. S. Hopewell and W. W. Williams, of Hillsboro; A. W. Harris, of Kingston; W. H. H. Llewellan, R. C. Hatton, A. B. Fall, J. C. Carrera and John R. Demier, of Las Cruces; F. B. Schermerhorn, of Jarilla; W. A. Hawkins, of Alamogordo; A. B. Fitch, of Magdalena; C. T. Brown, of Socorro; George W. Prichard, of White Oaks; J. T. McLaughlin, of San Pedro; J. B. Mayo, of Golden; Gus Mulholland, of Gallup; T. J. Curran and S. B. Ferguson, of Albuquerque; Christ Wiegand and T. B. Mills, of Las Vegas; J. A. Coran, of Bland; W. H. Greer, of Deming; C. J. Gavin and T. A. Schomberg, of Raton, Brigham J. Young, of Red River; Saly Raunheim, of San Pedro.

SOCIETIES AND TECHNICAL SCHOOLS.

Harvard University.—The mining department of the Lawrence Scientific School has now a very complete outfit for metallographic work, including a Schuckert-Zeiss arc lamp, a complete Zeiss optical bench, a special stand, objectives, and accessories, a micro-camera, and a special polishing machine. Research work is being carried on by several students.

American Chemical Society—New York Section.—In spite of a very stormy evening, the attendance at the meeting on May 10th was nearly as large as usual. Dr. Chas. A. Doremus presided. The following papers were presented: A. J. Rossi: "Alloys of Titanium and Titanium Steel." W. E. Dreyfus: "On the Relation of the Chemical Constitution to the Physiological Action of Certain Modern Anaesthetics." "E. H. Miller and R. W. Page: "The Quantitative Determination of Cadmium." P. A. Levene: (a) "Chemical Nature of the Enzymes;" (b) "Note on Nucleic Acid." L. L. Watters: "Analysis of Garden Sage, with Notes on the Determination of Essential Oils." Dr. Rossi exhibited very fine specimens of titanium steel and other alloys.

The paper by Mr. Dreyfus was discussed by Dr. Schmetzer, Dr. Doremus, Prof. Bogert and others.

Washington University.—The new Busch Chemical Laboratory, the gift of Mr. Adolphus Busch, of St. Louis, is a building 291 ft. long and 60 ft. wide, 2 stories high on one side and 3 stories high on the other. The architects, Messrs. Cape & Stewardson, of Philadelphia and St. Louis, designed the John Harrison Laboratory of the University of Pennsylvania. The walls of the new building are of Missouri granite, and the ornamental cut stone work of the windows and doors of Bedford limestone. The general chemistry laboratory is a room 130½ by 18 ft. with working tables for 125 students. Each working table accommodates 8 students and has one end against a window. On the wall opposite the windows is a continuous line of hoods. The building also contains laboratories for technical chemistry and electrolysis, qualitative and quantitative work, gas analysis, water analysis, organic work, special research and in the basement an assay room.

On the north side of the basement are located ventilating fans driven by electric motors. Cold air from the outside is drawn in by the fans and is forced over steam radiators and into the rooms. The warm air enters the rooms near the ceiling and the outlet flues have their openings near the floor. A separate system of fans, also driven by electricity, placed immediately under the roof, is connected with the hoods and with the hydrogen sulphide room, and can be made to draw air from all the hoods or from the hoods of any one laboratory.

Engineers' Club of Philadelphia.—At the meeting on May 4th, 74 members and visitors were present. Messrs. William Price Craighill, Charlestown, W. Va.; John Fritz, Bethlehem, Pa.; Chas. Haynes Haswell, New York, Benjamin Franklin Isherwood, New York; George W. Melville, Washington, D. C.; and William Hasell Wilson, Philadelphia, were elected to honorary membership.

Mr. Harrison Souder presented 2 communications, in the first of which, under the title "Notes on Pile-Driving," he described the method and results of driving test-piles before rebuilding the Penrose Ferry Bridge at Philadelphia. His remarks were illustrated by a lantern illustration and a table transcribed on the blackboard.

The second communication by Mr. Souder consisted of an informal description of the engineering features of design and maintenance of a large number of highway bridges, chiefly in the neighborhood of Philadelphia. His remarks were profusely illustrated by drawings and photographic views.

A general discussion on the subject of highway bridges followed, and was participated in by Messrs. Edwin F. Smith, Edgar Marburg, Carl Hering, Benjamin Franklin, Richard G. Develin, Charles Hewitt, Thomas G. Janvier, S. G. Comfort and others. Mr. John Birkinbine, being absent, sent a written discussion, in which he called attention to the unwise policy of the city councils of Philadelphia in appropriating for the present year less than one-tenth of the value of the 300 bridges in the city, for the purpose of their maintenance.

American Society of Mechanical Engineers.—The annual meeting of the society will be held at Milwaukee, Wis., May 28th to 31st, at the Plankinton House. Arrangements have been made with the principal railway associations for securing transportation and 1 1-3 fare for the round trip on the certificate plan. Arrangements have been made with the Pennsylvania Railroad, so that members of the society can secure a special through car from New York to Milwaukee.

The following papers will be presented: "Report of Committee on Standardization of Methods of Making Engine Tests"; "Requirements of Electricity in Manufacturing Work," W. S. Aldrich; "Portable vs. Stationary Machine Tools," John Riddell; "Practical Application of Superheated Steam," G. A. Hutchinson; "A Filtration Plant at Albany, N. Y.," Wm. O. Webber; "Tests of an Hydraulic Air Compressor," Wm. O. Webber; "The Bardwell Votometer," Bardwell & Hamilton; "Some Experiments on Ball Step-Bearings," Chas. H. Benjamin; "Pulley Press Valve," F. H. Stillman; "Determination of Fly-Wheels to Keep the Angular Variation of an Engine within a Fixed Limit," J. I. Astrom; "A Special Form of Boring and Facing Machine," W. S. Russell; "Efficiency Tests of 125 H. P. Gas Engine," C. H. Robertson; "A Method of Preparing and Baling Cotton in Round Bales," J. R. Fordyce; "Protecting Ferric Structures," M. P. Wood; "An Improved Type of Ingot-Heating Furnace," F. H. Daniels; "The Entertainment of the Visiting Engineers in Europe in 1900," H. H. Suplee; "Superheated Steam," E. H. Foster; "Drafting Room and Shop Systems," F. O. Ball; "Blue Printing by Electric Light," H. G. Reist; "Rules for Drawing Office," A. W. Robinson; "Influence of Titanium on the Properties of Cast Iron and Steel," A. J. Rossi; "A Few Instruments of Precision at the Paris Exposition of 1900," Wm. E. Reed; "Bevel Gear Cutting Machines at Paris," Fred. J. Miller; "The Locomotive Exhibits at the Paris Exposition of 1900," Storm Bull; "New Connecting Rod End," C. W. Hunt; "Method of Fling and Indexing Engineering Literature, Notes, Data," etc., Geo. H. Marr.

There will be trips to the plants of the E. P. Allis Company; the Nordberg Manufacturing Company; the Filler & Stowell Manufacturing Company; the Vilter Manufacturing Company and excursions to Waukesha and Mineral Spring. Visiting members will also be allowed to inspect the works of the Bucyrus Company at South Milwaukee and other points of interest.

INDUSTRIAL NOTES.

The Waclark Wire Company has removed its New York offices to 49 Wall Street.

The Wood Drill Works, of Paterson, N. J., has sent the Kingston Limestone Quarrying and Contracting Company a new outfit complete, consisting of 4 No. 3½ drills and 2 No. 2 drills.

Lucas Brothers, of the Golden Gate Plaster Works of San Francisco, report the receipt by the schooner "Garden City" of 750 tons of gypsum rock from San Marcos Island, Lower California, Mexico.

The Roebling Sons Company, of Trenton, N. J., who have charge of the construction of the new East River Bridge at New York City, have all the cables strung and have begun the construction of the foot bridge.

The office and business of the Wright Manufacturing Company, manufacturer of high-grade steam specialties, Cleveland, O., have been removed to Detroit, Mich., where the business of the company will hereafter be transacted.

In April, at the Duquesne Steel Works of the Carnegie Steel Company, at Duquesne, Pa., the open hearth department, containing 12 furnaces, turned out 38,267 gross tons of steel. The 40-in. blooming mill turned out 26,252 tons.

At the annual meeting of the Passaic Rolling Mill Company, of Paterson, N. J., W. O. Feyerweather was elected president and treasurer; O. C. Fairchild, vice-president; Jas. B. Cooke, secretary, and John K. Cooke, general manager.

During March the Santa Fe Railway Company consumed 85,000 bbls. of crude petroleum as fuel for its engines, an increase of about 30% within a few months. The use of this fuel is to be extended on other lines of the system outside of California.

The Nordberg Manufacturing Company, Milwaukee, Wis., recently received an order from the Tamarack Mining Company for a duplicate of the 6,000-ft. hoisting engine furnished some 2 years since. The firm also secured an order from the Champion Mining Company for a 20,000,000-gal pump.

The Brown Corliss Engine Company, with $1,000,000 capital, proposes to erect a large engine building plant at Western Union Junction near Racine, Wis., on the line of Chicago, Milwaukee & St. Paul Railroad. R. C. Luther, H. S. Thompson, W. B. Rhodes, Otis H. Childs and other Pennsylvania coal and iron men are interested.

The Bullock-Wagner sales organization has established a district office in the Marquette Building, Chicago, Ill. It will be in charge of Mr. H. B. Foster, who has for about 2 years served the Wagner Company as sales agent. He will have the assistance of E. W. Goldschmidt, formerly of the Western Electric Company.

Furnace H of the Edgar Thompson group of the Carnegie Steel Company at Bessemer, Pa., on May 4 had made 1,000,000 tons of bessemer pig iron, a record that is without a rival anywhere. The stack has averaged 395 tons every 24 hours since it blew in in March, 1894. The stack is 90 ft. high, 20 ft. in diameter at the bosh and has a 13-ft. hearth.

The American Engineering Works of Chicago, Ill., has recently received a number of export orders for mining and industrial cars, to be equipped with patent Anaconda wheels and axles. These orders have been from England, Japan, Mexico, British Columbia and Alaska. The company is also filling a number of export orders for shells for crushing rolls made from their special A. E. W. steel.

The Stanley Electric Manufacturing Company, of Pittsfield, Mass., has found it expedient in order to take better care of its large Southern trade to establish another Southern sales office, this one at Winston-Salem, N. C. F. A. Barr is district manager. The company's other Southern office is at Rock Hill, S. C., in charge of F. C. Whitner. The Stanley Company now has besides the two mentioned branch sales offices in Boston, New York, Philadelphia, San Francisco, Washington, and Madison, Wis.

The Brier Hill Iron and Coal Company and the Youngstown Steel Company, both of Youngstown, O., under the name of the Willoughby Dock Company, have secured 40 acres of land at the mouth of the Chagrin River, Ohio, and will erect docks to handle the ore from their mines in the Mesabi Range. A railroad is projected between Willoughby and Youngstown. The company was incorporated with a capital stock of $60,000. The incorporators are Edward L. Ford, J. G. Butler, Jr., George Tod, H. H. Stambaugh and John Stambaugh, Jr.

The annual meeting of the stockholders of the General Electric Company was held May 14th at Schenectady, N. Y. About 60% of the outstanding stock was represented. All the directors were re-elected except Thos. A. Edison, in whose stead Frederick P. Fish was chosen. The new board of directors is as follows: Gordon Abbott, Oliver Ames, C. A. Coffin, T. Jefferson Coolidge, Jr., Frederick P. Fish, George P. Gardner, Eugene Griffin, Henry L. Higginson, J. Pierpont Morgan, J. P. Ord, Robert Treat Paine, second, George Foster Peabody, Charles Steele.

The Boston & Lockport Block Company, Boston, Mass., reports that the quarter ending April, 1901, compared favorably with any previous quarter in its business history. Large stocks of blocks, pumps, trucks, etc., are carried in Boston, New York City and Lockport. This company controls several important patents and issues an illustrated catalogue giving results of tests of the strength of hooks and shackles made at the Watertown Arsenal. The company states it was among the first to put on the market a pump with non-chokable rubber diaphragm for the use of contractors and mines. The genuine is made under Loud's patent.

Walter Scranton, of the Lackawanna Iron and Steel Company of New York City, with other men, has acquired a controlling interest in the Continuous Metal Refining Company, which owns the Talbot patents for making open-hearth steel. The Continuous Metal Refining Company has elected Walter Scranton president and James P. Higginson secretary and treasurer, the other members of the board being Percival Roberts, Benjamin Talbot and Henry Wehrum. It is reported that the Pencoyd Iron Works, Pencoyd, Pa., have a shop right reserved and that a license is to be granted to Jones & Laughlins, of Pittsburg, Pa.

The Joseph Soisson Fire Brick Company, of Connellsville, Pa., manufacturer of coke oven brick, silica brick, fire brick and paving brick has recently put in operation a crushing and washing plant, with a capacity of 300 tons of crushed ganister or silica rock per day at the company's clay mines at Bailey Point, on the Cumberland division of the Baltimore & Ohio Railroad. It has installed an engine, boiler and Blake crusher, and a reservoir at an elevation of 900 ft. above the plant. The ganister at the company's clay mines underlies 2 veins of flint fire clay. The silica rock is said to analyze: Silica, 98.26; alumina, 1.17; iron, .00; lime, .00; magnesia, .00; water, .57. The clay analyzes as follows: Silica, 55.38; alumina, 30.42; iron, trace; lime, 52; magnesia, .34; alkalis, .22; water, 11.70. The company's plant at Moyer, Pa., is being rebuilt of brick and steel. The building will be 88 by 150 ft. The plant will be equipped with an 8 tunnel McHenry hot air dryer, a Freese stiff mud machine and a Hercules soft mud machine. The daily output of all the company's plants is 120,000 bricks.

TRADE CATALOGUES.

No. 4 of Ryerson's technical series, issued by Joseph T. Ryerson & Son, of Chicago, is an 80-page pamphlet entitled "Boilers." It describes internally fired boilers with Morison corrugated furnaces. The merits of these boilers are said to be durability, simplicity, safety, accessibility of parts, efficiency and compactness. The construction is shown by numerous cuts and the pamphlet contains many flattering testimonials.

The Gordon City Sand Company, of Chicago, Ill., is sending out copies of testimonial letters it has received regarding the McKelvey concrete mixers. These portable mixers, the company states, greatly facilitate work and ensure a more even quality of concrete than by the old method of hand mixing. They are made in 2 sizes. The hand-power machine is said to be able to mix 4 to 5 cu. yds. per hour, and can be run with from 1 to 4 men at the cranks. The power mixer is mounted on a platform and can be moved by 5 or 6 men and has a capacity of 20 cu. yds. per hour.

"Core Drilling Without Diamonds" is the title of a 48-page pamphlet issued by the Davis Calyx Drill Company of New York City, which will interest mining men who have occasion to prospect for oil, water, coal, iron ore, or other minerals. The pamphlet describes the drill in detail, shows how it works and how the bits can be sharpened. In addition the pamphlet tells for what classes of work the drill is best adapted, stating that in connection with the chilled-steel process it can be used for bringing up cores from the hardest rocks even if these contain crevices or other fractures. The drill has been used in the United States for testing lead ore deposits in Missouri, iron-ore bodies in Minnesota, coal seams in Pennsylvania and in sinking the foundations of the new East River bridge at New York.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

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GENERAL MINING NEWS.

Argument was heard in the United States Circuit Court at Trenton, N. J., on the application to make permanent the injunction restraining the American Smelting and Refining Company from turning over to M. Guggenheim's Sons the $45,000,000 of stock which was to be paid for the Guggenheim plant. Judges Kilpatrick and Gray, after hearing argument of counsel, dismissed the injunction, holding that the court was without jurisdiction.

Oil Exports.—In April the United States exported 11,427,378 gals. crude, 2,371,990 gals. naphthas, 64,704,109 gals. illuminating, 7,006,832 gals. lubricating and paraffin, and 1,630,146 gals. residuum; total, 87,140,455 gals., against 68,346,224 gals. in April, 1900; an increase of 18,794,231 gals. in 1901. In the 4 months ended April 30th the mineral oil exports aggregated 311,761,219 gals., against 283,053,419 gals. in the corresponding period last year, showing an increase of 28,707,800 gals., or about 9%, in 1901.

ALASKA.

Unalaska Island.

Philadelphia Crude Ore Company.—J. J. Habecker, general manager of this company, is preparing to send a party to Unalaska Island to make arrangements for opening the sulphur deposits the company proposes to work. A railroad 20 miles long from the base of Mt. Makushim to the seashore is talked of.

ARIZONA.

Graham County.

Arizona Copper Company, Limited.—This company reports that the production of its mines at Clifton for the month of April was 1,049 tons of copper (of 2,000 lbs. each).

CALIFORNIA.

Amador County.

(From Our Special Correspondent.)

Oneida.—Stoping is going on at the 1,500, 1,700, 1,800, 1,900 and 2,000-ft. levels, ore enough being taken out to keep the 60-stamp mill busy day and night. On the 1,200-ft. of the new shaft, drifts are being run. This is the 1,330 ft. of the old shaft and is the bottom of the old works. The new air compressor is on the ground and will soon be in position. C. C. Berby is superintendent.

Wildman-Mahoney.—The mills at both of these mines are running and underground work and repairs are under way. The force of men is to be increased soon and the properties worked to full capacity.

Calaveras County.

(From Our Special Correspondent.)

Alhambra.—On this property, located on the Murphys and Altaville Road, 3 miles from Murphys, owned by John Ross, a 2½-ft. ledge of rich ore has been developed.

Lightner.—On this claim on the north side of Angels, crosscutting has developed a 10-ft. ledge of ore, which averages over $10 per ton.

Martha.—This mine, which is an extension of the Ritter, has been opened up by tunnel and open cuts. A crosscut driven 25 ft. shows two veins, one 26 ft. wide and the other from 6 to 20 in., both carrying fair grade ore.

Ritter.—At this mine near El Dorado, 2 miles north of Mountain Ranch, a large amount of ore assaying from $12.50 upward per ton, is said to be in sight. The lower tunnel is in 460 ft. on the pay shoot and crosscutting into both walls shows 3 veins which, with the gouge and mineral matter, shows 21 ft. wide. The walls are well defined.

Kern County.

(From Our Special Correspondent.)

Angus Butte.—This property in the Angus Range has produced some rich smelting ore which has been shipped to the smelter at a heavy expense. Although there is a mill on the property, the ore is too base to mill at a profit. San Francisco people are the owners.

Butte Lode.—The last run of ore from this mine, north of Randsburg, was 34 tons at the Red Dog Mill. Average returns are over $116 per ton. The new hoist is in place and works satisfactorily. Among the improvements are new ore bins, track and buildings to enclose the engines and hoist. These improvements will be completed in a few days, when stoping and hoisting will be resumed.

Yellow Aster.—This mine works about 180 men and 130 stamps are dropping. On the Trilby Claim the deepest workings are 800 ft. from the top of the hill, and the ledge so far as known is over 80 ft. wide. In the deepest shaft of the Olympus, a gasoline hoist has been installed,

and sinking will be resumed to reach the lowest level of the Trilby about 250 ft. A shaft 70 ft. deep has been sunk on the California which shows a 6-ft. ledge in the bottom. The company owns 20 other claims.

Mariposa County.

(From Our Special Correspondent.)

Alice.—This mine on the west end of the Grant, which has been worked under lease by Vance & Skolund, has been closed down. The vein is said to have given out.

Mariposa Mill.—At this mill 1,800 tons of ore, which, it is said, yielded $20,000, were crushed during April.

Placer County.

(From Our Special Correspondent.)

Eureka Consolidated.—At this drift mine, 3 miles south of Sunny South, 22 ft. of gravel with quartz boulders has been found on a bench on the west rim of the channel. The drift being run to reach the bottom of the channel is in 130 ft. without reaching bed rock. About 18 in. of water come from the tunnel.

San Bernardino County.

(From Our Special Correspondent.)

Santa Fe Reduction Company.—The mines in the Buckeye Mining District, 8 miles south of Ludlow, recently acquired by this company, are looking well. On the Bagdad Claim the shaft is down 300 ft., crossing a 7-ft. ledge of good ore. It is the intention of the management to sink 200 ft. more before doing any drifting or stoping. Ten men are employed. An effort will be made to develop water near the mine.

Sierra County.

(From Our Special Correspondent.)

Croesus Mining Company.—This company which is working the Plumbago Mine on the Minnesota side of the ridge, 2½ miles south of Alleghany, has declared another dividend. The property is worked through tunnels.

Osceola.—Some rich ore is reported struck at this mine near Alleghany, adjoining the Plumbago Mine. A 60-hour run with a 2-stamp mill is said to have yielded over $10,000. A Los Angeles syndicate owns and works the property.

Siskiyou County.

(From Our Special Correspondent.)

Orcutt Brothers.—A tunnel is being run on this famous pocket mine on Graham Gulch, near Yocumville, to tap the ledge at a depth of 40 ft. This mine, it is said, has yielded about $15,000 in 6 months.

Trinity County.

(From Our Special Correspondent.)

Headlight.—At this mine, 3 miles north from Trinity Center, a cyanide plant is being installed to work the ore which is said to average $5 per ton on the surface.

Lawrence.—Some rich ore has been developed on this mine, by the owner, L. D. Lawrence, who, assisted by his wife, has worked the property for a number of years. They are reported to have taken out and milled in an arrastra, ore which has produced as high as $100 per day.

Tuolumne County.

(From Our Special Correspondent.)

Good Friday.—This mine near Soulsbyville, is being developed with good prospects. The shaft has been sunk 50 ft. and a drift shows a vein from 1 to 2 ft. wide, assaying over $20 per ton.

Marshall Mining Company.—This company is developing the Spring Gulch and Canon mines on the North Fork of the Tuolumne River, 2½ miles southeast of Carters. H. J. Sisty is superintendent.

COLORADO.

Gilpin County.

(From Our Special Correspondent.)

Mining Transfers and Deeds.—C. H. Polhemus et al. to Carr Mine and Colorado Company, Eagle and Double Eagle Lodes in Lake District; Golden Age Mining Company to the Carr Mine & Colorado Company, the Golden Eagle Lode in Lake District; E. P. Waters et al. to H. Schradsky, ½ interest in Farish, Eclipse, Comet and Comstock No. 2 Lodes and Farish Placer in Central District.

Barnes.—Milwaukee men have purchased this group in Illinois-Central District for a reported price of $100,000, with $15,000 paid down. Nic. H. Scheuer, Central City, Colo., is manager, and the new owners are installing a 30-H. P. hoist, with 1,150 ft. of new rope, and doing other work.

Carr Mine & Colorado Company, Limited.—This company has added to its holdings this week by the purchase of the Eagle Group, paying for the same the sum of $50,000. Belgian and English investors are interested. The property will be worked through the present Carr shaft, where sinking is at 640 ft., and will continue to 1,000 ft.

Defiance.—New Orleans, La., men have formed a company with a capital stock of $100,000 to work this property which adjoins the Topeka and other well known properties. A new shaft building and hoisting plant is to be installed. W. S. Robertson, formerly of Red Cliff, Colo., is to be manager.

Freedom.—This property, worked by C. R. Knight, of Denver, under a lease and bond, has been shipping some splendid mill ore, the returns last week showing values of from 4 to 8 oz. gold per cord, with the tailings running from $17.50 to $30 per ton. Returns from the smelting ore gave net values of $68 and $70 per ton, the best ores coming from the 8th or bottom levels. Steve Hoskin, Central City, is manager.

Gregory-Buell Consolidated Gold Mining and Milling Company.—The main shaft is being retimbered. The columns for the Cornish pumps are being put in and the new engine for the pumps has been received. The buildings are about the most complete in this country.

Gunnell Gold Mining and Milling Company.—The company has placed an order with McFarlane & Company, of Black Hawk, Colo., for an 8-in. Cornish pump for the 1,300-ft. level.

Lamberson & Warren.—Eastern parties are going to start up this property under a lease and bond with George C. Moore, Central City, as manager. There is a good plant of machinery.

Old Town.—A lift of 100 ft. was completed inside of 26 days, making shaft 500 ft. Another contract for 75 ft. is given. The ore in the shaft has been carrying values of 8 oz. gold per cord and is all shipped. G. Kimball, Jr., Russell Gulch, Colo., is manager. An 80-H. P. boiler is being installed.

Ridgewood Mining Company.—Daily shipments are about 2 cords, or 17 tons, per day, all going to the mills, though some iron is being saved. The ores are reported to carry higher values. Boston men are interested.

Wizard Tunnel Company.—The tunnel near Gilpin is now in 250 ft. The contract calls for 900 ft. The work is being carried on with Durkee electric drills, power being furnished by a gasoline engine. Easterners, mostly Missourians, are interested, with J. Farnsworth, of Gilpin, as manager.

Lake County—Leadville.

(From Our Special Correspondent.)

All of the downtown properties will this spring be connected with railroads. The construction of a switch to the Sixth Street Shaft and to the Cariboo at the head of Fourth Street is in progress. This will bring down the transportation charges 40c. per ton, quite a saving on a low-grade proposition.

A. M. W.—The smelters are stocked with zinciferous sulphides which have curtailed shipments. Development work continues at the 2d, 3d. 4th, 5th and 6th levels. At the lower level the pumps are handling about 800 gals. of water per minute.

California Gulch.—The pumps at the bottom of the 530-ft. level are hoisted out and work is suspended for the present.

Cloud City.—The shaft is down 500 ft. and has struck water. The flow is not strong, but sufficient to warrant putting in pumps which have already been ordered.

Diamond.—Sinking is resumed. Two stations have been cut, one at the 500 and the other at the 800-ft.

Dollie B.—Water is so troublesome that it has been decided to close the property temporarily.

Empire Mining Company.—This company has opened 300 ft. of a fine body of iron carbonates which will net $9 per ton. Whenever the roads permit shipments will be sent to the smelter.

Josie.—The vein has been followed 20 ft. and shows no signs of playing out, while the values hold up.

Lillian.—Lessees are shipping daily 50 tons of a good silicious ore.

New Leadville Home Mining Company.—The original lease on the Penrose was for 5 years dating from June, 1898. This has been surrendered and a new lease granted from May 6, 1901, for 10 years on the following terms: 10% on $10 ore or under; 20% on ore between $10 and $20; 25% on ore from $20 to $50, and 33 1-3% on ore over $50. Should the ore shipments for any month not amount to $500, the lessees are to make good the difference. This last clause will not be enforced while the shaft is being sunk. The leases have been extended on the Pocahontas, Gray Eagle, Alice placer and Bon Air, which gives the company an assured lease on 70 acres for 8 years.

New Monarch Mining Company.—This company has purchased the Cleveland claim from the Old Glory Company, adjoining the New Monarch on the west.

Ollie Reed.—This claim adjoining the Little Winnie has struck some fine lead ore running as high as 67%.

Penn Mining and Leasing Company.—From Nos. 1 and 2 shafts 100 tons of silicious ore are shipped daily.

Reno.—This shaft is down 350 ft. and sinking has been resumed.

Resurrection.—Suit has been brought against this company to recover $100,000 by the Fortune Company. The grounds are the alleged extraction of ore by the Resurrection from Fortune territory early in 1899. Damages are asked and also $50,000 for damage to the property. The suit is filed in the United States Court at Denver.

Rex.—Machinery has been ordered and work will be resumed as soon as it is in place.

Sixth Street.—This property will resume shipping 150 tons of iron ore and manganese from the bottom level, 600 ft.

San Miguel County.

(From Our Special Correspondent.)

Ophir Consolidated.—Manager W. S. Buckley, of Telluride, reports No. 6 level on the Butler advanced 175 ft. east and No. 3 level 210 ft. west. Both workings carry from 18 in. to 4 ft. of mineral, from which enough first-class has been shipped to pay for the work. No stoping has been done. Construction work on the company's new mill on the Denver & Rio Grande Southern Railroad will begin next week. The capacity will be 100 tons per day. The equipment will include crusher, rolls, stamps and Wilfley tables; also Huntington mills and Frue vanners.

Keystone Hydraulic Company.—This company is constructing a flume 12 by 6 ft. to be 3,000 ft. long and pipe lines 2,200 ft. long to supply water for 10-in. giants under a head of 650 ft. The flume will carry the entire flow of the East Fork of San Miguel River and the surplus, above the demand of the giants, will be carried away through a tail race. This equipment should wash from 10,000 to 15,000 yds. of ordinary gravel per day. Tests last season resulted in saving 50 c. gold per yd. from 6,000 yds. of dirt. The company controls from 600 to 700 acres of ground, on some of which the gravel is 200 ft. thick. E. L. Davis, of Telluride, is general manager.

Milwaukee-Ophir Company.—Geo. R. Dolf, of Ophir, manager, has made final payment of $30,000 on the Crown Point Group at Ophir; $10,000 was paid April 1st. Development on this property, as well as on the Deadwood Group, owned by the same company, is actively progressing.

San Miguel Mining and Development Company.—This St. Louis company, stocked at $1,500,000, has taken hold of a group of 25 gold-bearing claims in Bridal Veil Basin, 3 miles from Telluride. Representatives of the company have been for a month examining the property and records and development will soon be under way. E. L. Sleeper, of Telluride, is the local representative.

Smuggler-Union.—This property is still closed by reason of the strike ordered by the Miners' Union on May 1st, with no indication of a settlement. Many of the miners who quit have left for other camps, and the rest will probably be absorbed by other mines here. No other property in the district is affected by the strike. The company is pushing work on the new equipment.

Tomboy Company.—The company has overhauled the 100-ton mill on the Columbia-Wenona and is ready to begin crushing in a week when tramway connection is made with the Argentine workings. The addition of this mill will enable the company to reduce some 375 tons per day.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

Eclipse Consolidated Gold Mining Company.—The strike made last week holds out, from all accounts. The company is erecting a new ore house. Besides the company there are one or two lessees working on the property. On one of these leases good ore is being taken out. The Colwell Lease is also looking well.

Elkton Consolidated Gold Mining Company.—The additional pumps have succeeded in lowering the water and the 7th level will soon be recovered. When this is done it is the intention to bulkhead the water on it so that the pump on the 8th can easily be recovered. It now seems as though the worst is over. The heavy flow was encountered in the 7th level, whence it drowned the pump on the 8th. At present the production is quite small as most of the boiler power is needed to run the pumps.

Gold Crater Gold Mining Company.—A cage has been installed in the new working shaft on the Lady Smith Claim. The property is owned by W. S. Stratton, who has a large amount of property on this hill, and may develop it through this shaft. Considerable was shipped from the Summit Claim of this property in the early days of the camp.

Lillie Gold Mining Company.—The main shaft is 1,500 ft. deep, making it the deepest in the district. The vein is to be exploited at this level. No drifts have been run to the vein lower than the 1,200 ft. This mine was once one of the principal dividend payers, but has not been paying for 2 years.

Moose Gold Mining Company.—Sinking is in progress in this mine on Raven Hill and it is understood that the shaft is now over 1,000 ft. deep. Considerable work has been done lately, but without finding any ore of pay value. This

property was once a heavy shipper and paid $186,000 in dividends. Developments are watched with interest.

Solitaire Gold Mining Company.—A strike was made in a shallow shaft on the Comstock Claim by some lessees which looks promising. The claim is situated on Raven Hill near the Eclipse. This company also owns the lease on the Columbia No. 1 lode of the Cripple Creek-Columbia Company on Beacon Hill. This lease is at present doing very well.

Stratton's Independence.—The output for March was 5,400 tons of ore of the gross value of $214,000, the ore averaging about $40 per ton. It is understood that this output did not encroach on the reserves. The April output shows an increase.

GEORGIA.

Dawson County.

Georgia Dredging Company.—This company has been organized, with $500,000 capital stock, the object being to operate gold dredges on the Etowah River. The incorporators are George H. Van Vleck, Fargo, N. Dak.; James M. Ashley, Toledo, O.; W. A. Charters, Dahlonega, Ga. The main office will be in Dahlonega.

IDAHO.

Blaine County.

White Knob Copper Mining Company.—This company has taken an option on the Hood & Wilson Group of 10 gold-silver claims near Martin, and the Scott & Martin Group of 3 lead-silver claims.

Boise County.

Fisher Mining and Milling Company.—This concern has been reorganized. The Fisher Mine about 20 miles from Stanley Basin has been running all winter. The shaft is reported down over 300 ft., with levels at every 80 ft. The mill set up last fall will be improved by a new set of mortars, steam hoist and a tramway ¾ of a mile long. The work of installation will begin as soon as the material can be taken in, there now being nearly 4 ft. of snow upon the ground in that section.

Lemhi County.

St. Joe.—This mine at Blackfoot is reported to show some good copper sulphide ore in the 150-ft. level.

Owyhee County.

De Lamar Mining Company.—The March report of Manager D. B. Huntley, of De Lamar, states that 4,337 tons of ore were treated during the month yielding 1,647 oz. gold and 4,220 oz. silver. The ore assayed $8.95 gold and $1.24 silver, and the tailings $1.64 gold, 75c. silver. The total estimated income was $38,233, and the expenses were $27,673, leaving a net profit of $10,560.

Shoshone County.

August & Sunset.—These claims are under short time option to Butte men and will be developed this summer. The claims are owned by the Horst-Power Copper Mining Company on the Little North Fork of the Coeur d'Alene River, about 8 miles across the mountains from the Old Mission, at the head of navigation on the Coeur d'Alene River.

Empire State-Idaho Mining and Development Company.—The Last Chance at Wardner is said to contain a fine body of high-grade silver-lead ore. The Tiger-Poorman at Burke is a regular producer of medium grade ore in large quantities. Each of the 2 mines employs about 200 men. There has been much trouble in getting the Last Chance ore to market, as the mine lies up Milo Gulch at Wardner, about 2 miles from the railway, and the ore has been hauled to the track by wagons over a very poor road. A railroad spur up to the mine is nearly completed. It will be four miles long and will follow Government Gulch, and all the Last Chance ore will in future not pass through Wardner. A new mill has been erected and will concentrate all the output before shipment. The management of the company is in close accord with the American Smelting and Refining Company, and the production of ore is being kept at a fixed level in order to support the price of lead.

Killbucy Mining Company.—J. K. Clark and W. B. Hamilton, of Butte, are interested in this company, which has a group of silver-lead claims in Lake Gulch 2 miles west of Wallace. The property is opened by 4 tunnels, but no ore is now being shipped.

Lucky Friday.—This claim near the Hunter concentrator is owned by W. A. Jones, of Wallace, and two Mullan men. A 550-ft. tunnel has been driven.

Snowstorm Mining Company.—This company is developing a group of 6 copper claims 5 miles from Mullan and 2 miles from the Northern Pacific Railroad. The owners are residents of Mullan, J. B. Keifer being secretary. A 200-ft. tunnel has been driven and another of 600 ft. is to be driven. The vein is pockety, but in places carries some very good malachite containing some silver.

Wyoming.—This group of claims in Government Gulch near the Crown Point and Silver King properties, is owned by A. J. Devlin and the Webber Brothers, of Wardner. A 700-ft. tunnel and crosscuts shows some good silver-lead ore. The owners propose erecting a 300-ton concentrating plant on the South Fork of the Coeur d'Alene River below the Empire Mill.

ILLINOIS.

Sangamon County.

(From Our Special Correspondent.)

Springfield Fuel, Light and Power Company.—This company, incorporated under West Virginia laws with a capital stock of $4,500,000, including $1,500,000 in bonds, proposes to buy the property of 12 coal mining companies, located in and contiguous to Springfield; to construct 60 by-product coke ovens, with a capacity of coking 360 tons of fine coal screenings per day, producing about 240 tons of coke; to construct a coal washing plant for washing all the screenings from the several mines, with a capacity of about 1,400 tons; to construct a coke crusher with a daily capacity of about 240 tons; to construct a briquette plant to save the breeze coke, by combining it with about 5% of pitch and compressing it into briquettes; to erect a gas purifying plant, with a daily capacity of about 1,000,000 cu. ft. of gas; and a tar and ammonia condensing apparatus to save the by-products; to erect a central power house, utilizing the surplus gas from the coke ovens in large gas engines (4 of 650 H. P. each) to generate electricity for commercial light and power, and supply all necessary power for mining, hauling and hoisting the coal at the several mines; to build and operate a belt line railroad, connecting all the mines with the manufacturing plant, and with all the railroads centering in Springfield. The Belt Line will be about 15 miles long.

The 12 companies to be included are: Black Diamond Coal Company, Cantrall Co-Operative Coal Company, Citizens' Coal Mining Company, Clear Lake Co-Operative Coal Company, Jones & Adams Company, Junction Mining Company, Republic Iron and Steel Company, Sangamon Coal Company, Springfield Co-Operative Coal Company, Stames Coal Mining Company, West End Coal Company and Woodside Coal Company.

Thomas R. Gray, formerly of Trutter & Gray, is now sinking a shaft for coal east of Springfield on a spur of the Baltimore & Ohio South Western Railway.

Vermillion County.

(From Our Special Correspondent.)

Catlin Coal Company.—This company and the Consolidated Coal Company, miners at Catlin, and Fairmont, are started again after being idle for 5 weeks on account of difference of opinion between the operators and miners in regard to the interpretation of that part of the State agreement covering the cleaning up of falls of the roof. The matter was settled by John Mitchell, national president of the United Mine Workers, and Herman Justi, Commissioner of the Illinois Coal Operators' Association, who decided that the operators were, in the main, right.

MICHIGAN.

Copper—Houghton County.

Arnold.—This mine is kept free of water, but not over 12 men are employed. It is understood, however, that the Arnold has by no means retired from the race.

Atlantic.—The new hoist at "D" shaft has gone into commission.

Isle Royale.—The new mill has been tested again and found in perfect condition, and has gone into permanent commission. The rock bins at the new mill have been filled with stamp rock. Thirty power drills are used in the mine and stoping is well under way. A second skip is in each shaft, and will go into commission immediately.

(From Our Special Correspondent.)

The smelters are shipping copper by lake. The Quincy has shipped 310 tons and the Bigelow-Lewisohn mines 60 tons to Shicago, whence the metal will go East by rail. The Calumet & Hecla shipped 2,900 tons and 1,668 lbs. of mineral to the smelters at Black Rock, near Buffalo, on the "G. A. Flagg," a boat designed to carry mineral and to make a round trip every 2 weeks for the company.

Calumet & Hecla.—The Snow Steam Pump Company, of Buffalo, N. Y., is putting in a new pumping engine for this company, which will give a combined capacity of 30,000,000 gal. per day. Two Worthingtons and 1 Leavitt have been in use for a few years. The new pump is a horizontal, triple-expansion engine, equipped with Corliss valves gear. The capacity is 15,500,000 gal. each 24 hours.

A shipment of 9,500 bbls. of Portland cement to be used in constructing foundations for the heads in the new stamp mill has been received.

Work on the steel traveling crane at No. 15 rock house, on the amygdaloid, is nearly finished. It was made by the William Sellers Company, of Philadelphia, Pa., and has a capacity of 50 tons. The foundations for the hoisting plants in Nos. 13, 14 and 15 rock houses are about complete.

Hancock & Calumet.—This railroad will turn its property over to the Mineral Range Railroad, the latter issuing new stock for the old and assuming the bonded indebtedness. The Mineral Range has already doubled its capital, which is now $800,000. The difficulties with the Bigelow-Lewisohn mines have been settled and that group will not build a line, surveys for which were made last year.

Rhode Island.—The machinery for the new machine shop has arrived from Messrs. Manning, Maxwell & Moore, of Chicago, the makers.

Wolverine.—B. F. Shearer is in charge of the work on the mill to be erected on Traverse Bay, Lake Superior.

Copper—Keweenaw County.

(From Our Special Correspondent.)

Mohawk.—A small locomotive has been purchased from the Allouez Company for use about the stamp mill site.

Copper—Ontonagon County.

(From Our Special Correspondent.)

Adventure Consolidated.—This company has let a contract to the American Bridge Company for the construction of a 42 by 84 ft. shaft and rock house at No. 3 and a 30 by 60 ft. rock house at No. 1 shaft. Each building will be equipped with 4 rock crushers and a steam hammer and will be constructed of steel.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—The demand for zinc ore was active last week and but for the scarcity of cars shipments would have been much larger. The price on the best grades was cut from 50c. to $1 per ton, but lower and medium grades held their own. The top price was $28.50 per ton. Three cars of the Independence ore at Joplin, 3 of the Stevison-Moore ore at Prosperity and some of the Oronogo ore sold early in the week at this price and the heavy sales of fancy ore early had a tendency to break the market, but leading producers refused to sell below $28.50. Lead was steady all the week at $22.75 per 1,000 lbs., the same price paid for the last 3 weeks. Following is the turn-in by camps of the Joplin District for the week ending May 11th:

	Zinc lbs.	Lead lbs.	Value.
Joplin	2,467,750	466,660	$45,134
Galena-Empire	1,399,040	215,960	19,326
Carterville	2,070,850	266,410	29,102
Webb City	494,760	46,640	6,459
Oronogo	1,086,940	18,770	13,841
Aurora	650,210	27,240	8,248
Zincite	297,380	3,610	3,635
Neck City	337,930	.....	4,562
Granby	368,000	28,000	3,825
Spurgeon	239,750	41,340	3,243
Cave Springs	144,070	9,430	2,704
Central City	158,300	21,550	2,311
Roaring Springs	160,180	9,340	1,872
Duenweg	106,130	54,300	1,699
Carthage	38,600	.....	463
Carl Junction	79,060	.....	1,067
Total	10,098,950	1,209,250	$147,521
Total 19 weeks	192,193,710	23,947,920	$2,855,420

Zinc value, $127,314; lead, $20,207 Zinc value 19 weeks, $2,318,775; lead, $536,645.

During the corresponding week last year, fancy zinc ore brought $30 per ton and lead sold at $23 per 1,000 lbs. The sales were greater than last week by 1,833,740 lbs. of zinc and 76,660 lbs. of lead, and the value was greater by $49,279. For the first 19 weeks last year the sales were less than this year by 7,249,950 of zinc and 2,155,430 lbs. of lead, but the value was greater by $527,898. Compared with the previous week, the sales were less by 2,812,830 lbs. of zinc and 127,750 lbs. of lead, and the value was greater by $49,478.

American Zinc, Lead and Smelting Company.—Suit for $10,000 has been brought against this company by Charles Seaman on account of injuries received from a premature explosion of powder while tamping a shot March 8th, 1901.

Blue Wing.—This mine, mill and lease was sold on May 6th, to Judge Q. A. Smith, of Lansing, Mich., for $5,100. This was one of the properties owned by the late International Zinc Company, Limited, and the sale was at public auction under order from the circuit court of Jasper County.

Suffolk & Joplin Zinc Company.—A tract of land belonging to this company was attached by the sheriff on May 7th, on a writ issued in favor of E. S. Nevins, for coal bills amounting to $142. The land attached is on Spring River, north of Carthage.

MINNESOTA.

(From Our Special Correspondent.)

No boats are moving yet and the rail distribution of ore is extremely slow. Docks at all ports are full. At Two Harbors 12 large ships are loaded. At Superior ore is coming down very slowly on account of the crowded pockets.

The United States Steel Corporation has taken a lot more outside tonnage and now almost every large shipowner on the lakes whose boats are fit to carry ore has contracts with the corporation. These include Gilchrist, Elphicke, Brown, Pickards, Mather & Company, the Corrigans, Inter-

lake Steamship, Hopkins, Eddy Brothers, Oliver and others. The rate remains steady at 80c., 70c. and 60c. from the various ports, though owners are trying to force it up.

The iron ore roads are unwilling to accept the stipulation offered by the State in consideration of its reopening the rate case of December. In the meantime the 60c. rate holds under the December order. The State has called in United States Senator M. E. Clapp as counsel. He was State Attorney-General when the hearing was held.

The rails are laid on the Eastern Minnesota's Virginia cut-off. It reduces the road's haul from parts of the Mesabi Range by 40 miles.

Buckeye Iron Company.—These lands, under lease to J. T. Jones et al., are being tested by drill. A hole 300 ft. from the old shaft is in ore. Considerable money was spent here in 1893. It is a State lease, in T. 56, R. 23.

Colonial Mining Company.—This company has begun shipment from its Kanawha Mine and has started pumps at the Hale.

Commodore.—This mine, belonging under lease to Corrigan, McKinney & Company, is closed and the pumps are being hoisted, preparatory for a long shut-down, owing to a difficulty over royalty which the lessees consider too high for this year's prices. It is about 11% of the selling price of the ore. Corrigan, McKinney & Company have made large sales from their Stevenson and may work that mine to the exclusion of Commodore, a very wet mine, though Columbia, now being opened by Jones & Laughlins, will probably drain it. Commodore has been employing 150 men.

Jones & Laughlins.—Agent Kidder and Capt. Walters, of Ishpeming, have been on the Mesabi directing work at the Columbia and starting drills at Lincoln. Columbia will probably be the star wet mine of the Mesabi, outside Penobscot. With not over 250 ft. of openings it is pouring water from 3 pumps.

Sauntry.—This mine has begun shipment to Allouez Bay of 2,000 tons daily. The amount may be increased later.

Pickands, Mather & Company.—This company is to ship shortly from Corsica. Elba is shipping, as is Sparta. H. G. Dalton, of the firm, has been on the range. Nothing will be done at the Hobart Mine at present.

Iron—Vermillion Range.

(From Our Special Correspondent.)

Chandler Iron Company.—This company has about 260,000 tons in stock. The hoist of 2,100 tons a day is being shipped. Day shift alone is worked, about 500 men.

Minnesota Iron Company.—This company is working 400 men at its London mines, shipping several train loads daily from the hoist. No stockpile shipments are made yet. The company is working 11 diamond drills, of which 3 are underground and 8 at the old Lee property. An underground drill has found ore nearly 100 ft. from other lenses in Montana shaft.

Pioneer.—This mine is working 500 men and expects to ship 550,000 tons this year. It has not far from 250,000 tons on surface and is hoisting 2,000 tons daily.

MONTANA.

Carbon County.

The coal miners at Red Lodge and Bridger closed down recently, owing to strike agitation by outsiders. The mines were closed to avoid trouble over the 8-hour law. It is said that the men at Red Lodge wanted 10 hours pay for 8 hours' work.

Cascade County.

Construction and repair work at the Great Falls Smelter is reported entirely suspended by the strike of the masons for an 8-hour day and 9 hours' pay. Two hundred men have been laid off, as the demands of the strikers have been refused. An effort was made to get the carpenters out too, but they refused to strike.

(From Our Special Correspondent.)

Boston & Montana Smelter.—All construction work on the new buildings being erected at these works has been discontinued. Six stone masons who had been working 9 hours a day struck for an 8-hour day. Anticipating further trouble, the company suspended all improvements by laying off about 200 men, including stone masons, quarrymen and laborers. Operations at the smelter proper have not been affected.

Deer Lodge County.

(From Our Special Correspondent.)

Emery.—Irwin Higgins will equip this property with a new compressor plant from the Ingersoll-Sergeant people.

Hanna.—This property, situated in upper Flint Creek, owned by Anaconda parties, is under bond to Eastern people for $60,000. George Savage, of Butte, is interested in the deal.

Jefferson County.

Gray Eagle.—Ex-Governor Lind, of Minnesota, with other men, has taken hold of this mine, near Basin. A. D. LeMay is superintendent. The mine is owned by Holmes & Dahlman. The Gray Eagle is said to have produced $150,000 for its two owners before they closed down on account of the falling off in the quality of the ore. It is expected that the new company, which has a lease and bond, will build a concentrator.

(From Our Special Correspondent.)

Basin Gold and Copper Mining Company.—The windup of this concern took place May 4th at Boulder, when the property was sold by the sheriff to satisfy a judgment for $46,000 held by H. L. Frank, who bid in the property for the amount of the judgment. The property consisted of some 16 lode claims, a millsite, and a concentrating plant. The personal property was sold to Mr. Frank during April for $2,500. No attempt will be made to start, probably, for a year.

Lewis & Clarke County.

The East Helena plant of the American Smelting & Refining Company will, it is said, soon resume operations, an agreement having been reached between a committee of the strikers and a representative of the company from New York. There will be a reduction of 10% from the wages paid under the old 10-hour work day, the men working but 8 hours hereafter, and the men will not become members of the Smeltermen's Union.

(From Our Special Correspondent.)

American Smelting and Refining Company.—In an interview with Manager C. W. Whitley, of the East Helena plant, he states that the real cause of the shutdown is the attempt of the men to form a union; that while there was a difference in the scale of wages offered and what was asked for by the men, this difference did not amount to much and was not considered to be of importance by the company. In the meantime ores that have been treated at this plant will probably be handled by some of the other plants of the company, either at Denver, Omaha, or Salt Lake City, possibly all three. The improvements under way will be completed; the new brick bag house and the long horizontal steel flue connecting the bag house and the furnace department is about completed. The total cost of all this is something like $200,000.

Madison County.

(From Our Special Correspondent.)

Blackstone.—This Indian Creek property, 6 miles from Sheridan, belonging to Alex. Gray, will be worked by a company which has been organized for that purpose.

General Shafter.—This property at Summit, owned by Bert Ribbel and R. R. Smith, has ordered from Fraser & Chalmers a 10-stamp mill which will be on the ground in a few weeks. The mill will have a cyanide plant in addition to the plates.

Single Standard.—The tunnel on this Wisconsin Creek property, opposite Leiterville, is now in 900 ft. and will probably be extended 200 ft. further in order to reach the lead. It is owned by W. W. Wishon, of Butte, and Frank Pine, of Anaconda.

Wisconsin Creek Placer.—George Metlan, of Sheridan, will have charge of operations on this property this season. Last season the property paid expenses and it is believed that, as the machinery is now in place, the property will pay large profits.

Silver Bow County.

The proposition of the Butte Miners' Union to invest $50,000 of its surplus in Amalgamated Copper stock was decided at a largely attended meeting of the union held May 12th. A resolution was adopted directing the trustees to make the purchase by a majority of less than 50% out of a total vote of over 500. It is expected that the matter will be taken into court and an injunction to restrain the purchase will probably be asked by the members who are opposed to the action.

Anaconda Mining Company.—At the annual meeting at Butte on May 15th the following were confirmed as trustees; Wm. Scallon, H. H. Rogers, W. G. Rockefeller, W. L. Bull, A. C. Burrage, Wm. Rockefeller and E. C. Bogert. No report was presented.

Parrot.—The new Ingersoll-Sergeant cross compound Corliss air compressor, while not as large as the Anaconda compressor, is probably second in size. It has a capacity of more than 4,000 cu. ft. of free air per minute at a pressure of 100 lbs. per sq. in. Its dimensions are: High pressure of steam, 24 in.; low pressure steam, 44 in.; low pressure air, 36 in.; high pressure air, 22 in.; length of stroke, 48 in. The compressor is built on a solid granite foundation. Harry Galloway is superintendent.

(From Our Special Correspondent.)

Butte Mining and Development Company.—The shaft on the Emma Claim is down 270 ft. A 5-drill compressor has been ordered. The new hoist, good for 1,200 ft., is working smoothly, two 80-H. P. boilers are in use, and a new station pump has been placed on the lower level.

Montana Ore Purchasing Company.—The additional bond for $350,000 required from this company by the Supreme Court in the Pennsylvania Case has been furnished by the Delaware Surety Company, organized under the laws of the State of Delaware on April 22d last by William H. A. Fisher, H. T. Stuart, G. E. Fischer, of Brooklyn, N. Y.; Robert L. Martin, of Germantown, Pa., and Henry Vilthuson, of New York. The capital stock is $1,000,000, fully subscribed. The company claims assets amounting to $1,998,000. A. B. Clemonts, of Butte, is named as the Montana agent.

Ophir.—Pumping out the shaft is progressing; the water is down to the 200-ft. It has been found necessary to put in additional boiler capacity. A Kansas City company is furnishing the funds.

Parrot.—This company has petitioned for an injunction against the Nipper, claiming that a great quantity of water is allowed to drain from the latter mine into the Parrot shaft. This is in connection with the action begur some time since by this company against F. Aug. Heinze, A. P. Heinze and the Montana Ore Purchasing Company involving the ownership of certain ore bodies that lie beneath the Advanture Lode Claim.

NEVADA.

Humboldt County.

Niter Deposits.—W. H. Hamilton, of San Francisco, has been experimenting on a deposit near Lovelock, which is said to carry niter. The deposit is stated to be of low grade, but of considerable size, and Mr. Hamilton is seeking a cheap method of extraction.

White Pine County.

(From Our Special Correspondent.)

Chainman Mining and Electric Company.—Ground was broken for the new mill on April 28th and contracts call for completion of work to permit starting the mill on September 1st. The new site is 500 ft. from the old mill and shaft. The ore will be carried to mill by an electric tramway with a flat road bed from the collar of the shaft to the top of the ore bins. A new ore bin of 300 tons capacity is being put in at the shaft, where the ore will be screened before tramming to the mill.

Ely Mining and Milling Company.—The plant has been closed down for 10 days to repair rolls and rearrange screening machinery. Three more screens and 2 elevators are being placed and the ore will be all crushed and screened to No. 30 mesh instead of No. 20, as formerly. The extraction was not satisfactory with coarser crushing. A shipment of 280 lbs. of aurocyanides valued at $8,000 was made on May 1st as the result of the first run of the mill on 1,000 tons of ore. C. W. Doty, of Tintic, Utah, has been engaged as mine superintendent in place of Geo. W. Marx, resigned. Mr. Doty was formerly foreman in the Eureka Hill Mine at Tintic.

Sapho Mining Company.—This company was organized in Salt Lake City with a capital stock of 300,000 shares valued at 25c. each. P. S. Keogh, of Salt Lake, is president, and P. C. Weber, of Ely, secretary and manager. The company owns 3 claims adjoining the Ely Mining Company's property at Ely and about 1,200 ft. from the Chainman Company's mines. A tunnel is being run to cut the ore body 300 ft. from the face. Some of the samples of ore taken from the croppings of the vein show higher values in both gold and silver than are found in the Robust Mine of the Ely Company.

OREGON.

Jackson County.

(From an Occasional Correspondent.)

Foots Creek.—A 5-ton mill test went $85. Regular development is being done by O. C. Purkeypile.

Dixie Queen.—James Fitzgibbons is delivering 50 tons of high-grade ore, sampling $100 per ton.

Roaring Gimlet.—A 15-ton run at the Rogue River custom mill made $3.400. The ore was taken out at a depth of 40 ft. The property is worked by a lease from Mitchell & Hourck by H. Sandborn & Company.

PENNSYLVANIA.

Anthracite Coal.

West End Colliery Company.—The Melville Coal Company and the West End Coal Company have sold out their holdings at Shickshinny to a party of Scranton men, who have organized this company with a capitalization of $800,000. The officers are: H. P. Simpson, president; H. H. Brady, Jr., vice-president; J. S. McAnulty, treasurer, and J. N. Rice, general manager. The 2 collieries have a capacity of 2,500 tons a day and have 11,000,000 tons of coal to mine. William Connell was the chief owner of the Melville Mine. Conyngham & Company, of Wilkesbarre, were in control of the West End Company.

SOUTH DAKOTA.

Custer County.

(From Our Special Correspondent.)

Copper Butte Mining Company.—W. H. Buffum, of New York City, president of this company, is at Custer to push the development of a group of claims on Spring Creek, 11 miles northwest of Custer. Ten men will be employed.

Mayflower.—F. C. Graydon, general manager of the Chicago Mica Company, has purchased the steam hoist at the Vigilante Mine and has moved it to the Mayflower.

North Star.—The main shaft is being timbered and sinking to the 500-ft. level will start this month.

Old Bill.—Men are at work in this mine, 4 miles north of Custer. The mine is bonded to J. B. Safford, of Chicago, and is owned by N. Ross and B. R. Wood, of Custer.

Lawrence County.

(From Our Special Correspondent.)

Central City Cyanide Plant.—The first cleanup from the cyanide plant at Central City, owned by Reilly & Barry, has been made. The mill is to treat ore from the Cornucopia and Pay Streak mines, in Portland District.

Golden Reward Company.—Bids are advertised for the new 200-ton cyanide plant to be built on Deadwood on the site of the chlorination works. The company expects to have the plant running by August. The company will sink another shaft to quartzite south of the Delaware Shaft, in Ruby Basin District.

Homestake Company.—A boiler exploded at the Highland Hoist May 10th killing one man and damaging the buildings and machinery. The sawmill was crippled and the company will be delayed for a short time in getting out timbers. The first cleanup from the new cyanide plant will be made this week. The machinery is working nicely and no stop has been made since starting up 10 days ago.

Horseshoe Mining Company.—This company has closed down its chlorination works at Pluma indefinitely and the general manager is going to Montreal to confer with the owners about erecting a smelter.

Little Blue.—A cyanide plant is to be erected by the Des Moines men who have purchased the Little Blue Group in Yellow Creek District. About $21,000 was paid for the ground.

May Mining Company.—This company has been organized by Ernest May and associates, of Lead, to work the Realization Claim in Garden City District. A cyanide plant may be installed. A 250-ft. shaft and 150 ft. of crosscutting constitute the development.

Redwater Company.—The site for a smelter has been surveyed on Redwater Creek. It is reported that ore has been encountered in the east drift of the Chicago & Two Bit Mine in the Two Bit District.

Silver Plume.—Four car-loads of ore are shipped daily to the custom cyanide plant in Deadwood, leased by W. D. Parker, of Deadwood.

Spearfish Mining Company.—A night shift has been put on at the cyanide plant in Ragged Top District. The capacity of the mill will be doubled.

Pennington County.

(From Our Special Correspondent.)

Cochran.—James Cochran, at old Meyersville, has started up his 30-ton Huntington mill for the season's run and will treat about 20 tons of ore per day.

Elizabeth Mining Company.—This company, of Milwaukee, is erecting a 40-stamp mill at the Bismarck Mine, at Keystone. The company installed a costly process some time ago for concentrating the ore, but it failed to give satisfaction. Amalgamation and cyaniding will be used. The Cross Group has just been purchased by the company.

Golden Slipper.—J. B. Safford, of Chicago, will start this week to unwater this mine east of Hill City.

Grizzly Bear.—A steam hoist has been purchased by Denver parties for this claim near Oreville.

Mary Bell.—The Kerney brothers, of Rochford, may soon erect a stamp mill on Little Rapid Creek, near the mine.

Standby.—A tunnel was run in 1,400 ft. at this mine at Rochford and an upraise is being made. The mine is owned by the Price & Baker Company, of Lead. A 40-stamp mill was formerly worked on the surface ore.

TEXAS.

Jefferson County.

The boom in oil lands is reported waning. A number of dry wells show that the producing area is smaller than anticipated. Many wildcat companies have disposed of considerable amounts of stock for which the purchaser will have nothing to show, since the franchises of the companies have been cancelled by the State authorities for non-payment of the State franchise tax. A large number of wells are drilling and the real extent of the Beaumont pool is likely to be known before long.

Lucas.—This oil well and the McFadden No. 3 at Beaumont are involved in litigation, the suit being entitled Emma R. Borring vs. W. P. H. McFadden et al. The petitioners allege heavy damages and ask for an injunction.

Lone Star & Crescent Oil Company.—M. K. Fletcher has conveyed to this company, of New Orleans, all of lot 24, containing 5 acres and 2½ acres out of lot 25, of Spindle Top Heights. The consideration being 125,000 shares of the Lone Star & Crescent Company's preferred stock, fully paid up. Edward G. Schleider also has conveyed to the company all his title and interest in and to a minning lease which he held on the above mentioned property, together with all derricks, engines, pumps, pipes, tools and materials thereon; the consideration received by Mr. Schleider is the same as that paid Mr. Fletcher.

Spindle Top Oil Company.—This company has begun the construction of a 40,000-bbl. capacity steel tank on its land leased from the Keithward Oil and Fuel Company. The foundation for this big tank is prepared and a large portion of the material is on the ground.

UTAH.

Summit County.

(From Our Special Correspondent.)

Park City Shipments.—During the week ending May 11th there was marketed through the Mackintosh Sampler 3,246,470 lbs. of ore and concentrates,: which represents the output of the camp. Following are the several contributors: Silver King, crude ore 354,610 lbs.; concentrates 448,740 lbs. Daly-West, crude ore 948,620 lbs.; concentrates 362,140 lbs. Ontario, crude ore, sulphides, 918,530 lbs. Anchor, concentrates, 213,870 lbs.

WASHINGTON.

Ferry County—Republic.

(From Our Special Correspondent.)

Flag Hill.—Improvement is noted on the drift 55 ft. below the adit level.

Gold Ledge.—The tunnel is in 286 ft.

Morning Glory.—The men have been transferred from the 235 to the 285-ft. level. The returns from over 19 tons of ore last shipped to the Granby Smelter, at Grand Forks, B. C., were $145 per ton.

Mountain Lion.—The main shaft is down 350 ft. below the adit level, with a station at 200 ft. for miners after blasting. Superintendent Wyatt, who has been inspecting some mines in Idaho and Oregon and visiting the main office of the Mountain Lion Gold Mining Company at Portland, Ore., has returned to Republic. He says the shaft will be sunk 70 ft. deeper, when new levels will be opened at 200 and 400 ft. below the adit.

Republic Power and Cyaniding Company.—The mill is now running steadily and taking ore from the Ben Hur, Lone Pine-Surprise, San Poil and Black Tail mines, in addition to that from the Republic Mine.

Trade Dollar.—The shaft is down 90 ft., with the bottom in solid rock.

WEST VIRGINIA.

Kanawha & Hocking Coal and Coke Company.—This company has been organized with H. H. McKeehan, W. B. Stewart, John M. Garfield, Edward A. Kline and Gustav Vondensteiner, all of Cleveland, O., as incorporators. The principal office is at Mammoth, and the mines are to be in the counties of Fayette and Kanawha. The capital stock is $3,500,000.

Marion County.

Georges Creek Coal and Iron Company.—Nine men were killed, 3 fatally injured and a number of others burned by an explosion in the shaft of this company at Farmington on May 15th. The explosion is said to have been due to gross disobedience of orders, a miner carrying a naked lamp in the mine. Forty men were in the shaft.

FOREIGN MINING NEWS.

AUSTRALASIA.

Western Australia.

The report for April puts the gold production of Western Australia for April at 150,018 oz. crude. For the 4 months ending April 30th the total reported was 552,058 oz., crude, which compares with 501,218 oz. for the corresponding period last year; showing an increase of 50,840 oz., or 10.1%. The total this year was equal to 493,924 oz. fine gold, or $10,209,386.

CANADA.

British Columbia—Boundary District.

Men Employed.—The approximate number of men employed at the different camps in connection with mining and smelting is as follows: Greenwood, 400; Deadwood, 200; Summit, 130; Wellington, 30; Central, 25; other camps, 50; smelters, 120; total, 955.

(From Our Special Correspondent.)

B. C. Chartered Company.—Ore shipments from this company's B. C. Mine in April were 5,010 tons; May (9 days), 1,050 tons; total to May 9th, inclusive, 35,406 tons. Prospecting with the diamond drill is in progress at the 400-ft. level.

British Columbia Copper Company.—Shipments from this company's Mother Lode Mine during April were 9,480 tons; May 1st to 9th inclusive, 2,460 tons; total to May 9th, 27,044 tons. Besides obtaining ore from stopes at the 200 and 300-ft. levels, 3 surface openings are adding from 100 to 150 tons to the daily output. Machinery is all working well and matters are shaping for an increased output, so soon as this shall be required at the company's smelter.

British Columbia—East Kootenay District.

St. Eugene.—It is stated that this mine at Moyie, which has been nearly closed, is now employing more men. The mill is running day shift and on 3 days in the week half a night shift. The ore for the mill is coming from the Lake Shore No. 1 dump.

CUBA.

Chirivicos.—The first cargo of iron ore to be shipped from the recently opened mines at Chirivicos left there on Sunday, May 12th, for Baltimore in the British steamer "Kennett." There are 2,200 tons in the consignment, which is for the Maryland Steel Company at Sparrows' Point.

COAL TRADE REVIEW.

New York. May 17.

Anthracite.

The anthracite trade shows little change; business, for this season of the year, is good and there are no reports of over production or of coal selling at less than regular prices. The market is firm and the outlook excellent. Buying is well distributed.

In the West coal is arriving at upper lake ports and, owing to the late opening of navigation and the fact that receiving docks were about bare, there is bound to be a heavy movement, one that may keep the docks busy all summer. Because of the ice jam on St. Claire River, vessels have been slow in getting to the loading ports and the movement up the lakes is only fairly under way. Neither vessel owners nor shippers seem anxious to make season charters, and most of the coal shipped is on single trip charters. So far 40c. is the rate from Buffalo to upper lake ports. Trade at the head of the lakes amounts to little as yet, though with liberal arrivals of anthracite there will be a fair movement from the docks to take advantage of spring prices. In Chicago territory coal is arriving slowly by lake, and buying is not brisk. Dealers, however, are reported trying to get in supplies at Chicago, and those who have ample storage facilities and good bank accounts are reported anxious to take advantage of the new order of things. At lower lake ports buying for next winter's needs is reported unusually active. The movement of coal from Buffalo when vessels arrive in numbers is expected to break all records. In the East the demand is as good as can be expected for May. Coal is moving freely and the market is very firm. Sales agents at New York speak very confidently and some go so far as to say that the movement of coal in May will surpass all records.

May prices for free-burning white ash coal, f. o. b. New York Harbor ports, are: Broken, $3.85; egg, $4.10; stove and nut, $4.60. There is no schedule of prices for the steam sizes, but the demand for these is so strong that prices are very firm at about $2.85 for pea and $2.50 for buckwheat f. o. b. New York Harbor ports.

Notes of the Week.

Delaware & Hudson.—At the annual election on May 14th change was made in the Board of Directors. The vacancy caused by the recent death of James R. Taylor was filled by the election of George I. Wilber, president of the Wilber National Bank of Oneonta, N. Y. Mr. Wilber has been for many years one of the largest stockholders of the Delaware & Hudson Canal Company, and is in accord with the present administration.

The directors of the Jersey Central Railroad have elected the following officers: Geo. F. Baer, president; Chas. H. Warren, vice-president; J. Rogers Maxwell, chairman of the executive committee. G. O. Waterman, for many years assistant controller, secretary and treasurer. The separate organization of the company is maintained. No consolidation of offices or business is reported, as the results of the new relations of the company with the Reading Company.

Bituminous.

The seaboard soft coal market continues quiet and dull. There has been some talk about a heavier movement to foreign countries owing to the English export duty, but with freight rates at the present level a 25c. advance on English coal makes little difference to American producers. The fleet of vessels that has been discharging coal at points beyond Cape Cod is getting back to the shipping ports and relieving the situation there somewhat. Still there is a lot of coal awaiting vessels at tidewater and the railroads continue to embargo those shippers who cannot provide prompt shipment.

Trade in the far East shows little improvement yet; the market there has not recovered from the heavy arrivals and although the better grades of coal sell at full prices, lower grades are offered at substantial concessions. Along Long Island Sound trade is fairly good. At New York Harbor there is little or no improvement in the tonnages taken by consumers. All-rail trade has fallen off still more.

Transportation from mines to tide is fairly good. Car supply at the mines is regulated by the dispatch shown by each shipper in moving coal at tidewater. The coastwise vessel market shows no especial change and we continue to quote current rates from Philadelphia as follows: Providence, New Bedford and the Sound, 60@65c.; Boston, Salem and Portland, 70@75c.; Wareham and Lynn, 80c.; Portsmouth and Bath, 75@80c.; Newburyport, 85c.; Saco, 90c. and towages; Gardiner, 80c. and towages; Bangor, 95c. @$1.

Though the poorer grades of coal have been offered at below the regular schedule prices, the better grades are pretty firm at $2.50 f. o. b. Philadelphia; $2.43 f. o. b. Baltimore; $2.50 f. o. b. Newport News and Norfolk, and $2.85 f. o. b. New York Harbor ports.

Note of the Week.

The Chesapeake & Ohio Railway Company reports the coal tonnage over its line in March—West Virginia coal—at 436,797 short tons, an increase of 84,412 tons over last year. For the three months ending March 31st the total coal carried was 1,189,607 tons, against 971,675 tons in the corresponding period of 1900; showing an increase of 217,932 tons, or 22.4%, this year.

Birmingham, Ala. May 13.

(From Our Special Correspondent.)

The Alabama coal market is not as active as it has been for some time past and there is some complaint to be heard coming from the producers. Work at some of the mines has been reduced from 6 to 3 and 4 days per week, and it is not at all unlikely that the reduction may be greater. The deal whereby the Monongahela Coal and Coke Company, of Pennsylvania, comes in possession of coal properties in Walker County, Ala., mention of which has been made heretofore, has not yet affected the output of those mines. The mines along the Southern Railway in Walker County, purchased by the Pennsylvanians, are still working hard and the product is being shipped to Greenville, Miss., and thence down the Mississippi River to lower Mississippi and Louisiana points. The demands of the furnaces and other manufacturing interests in this State for fuel are still quite heavy and are being met promptly by the coal producers. During the week the Central Railroad Company of Georgia will give out a contract for its supply of coal. The Republic Iron and Steel Company was supplying this company up to a week or so ago, but trouble between whites and blacks at the mines of the company caused some delay in getting out all the coal that was needed to fulfil the contract on time, and as a result, so it is stated, the contract will be given out to others.

State Mine Inspector J. deB. Hooper has given out the official report, in printed form, of the output of coal and coke in this State for the year 1900. The report shows the following: Coal production, 8,273,362 tons; 37 fatal accidents; 386 employees to each life lost; 223,603 tons produced to each life lost. The production of coke last year in Alabama amounted to 2,119,917 tons, with 6,492 coke ovens in operation. Of this amount Jefferson County produced 1,825,785 tons, with 5,002 ovens. Walker County came next with 105,610 tons and 588 ovens; Bibb County next with 103,109 tons and 467 ovens; Tuskaloosa County with 70,154 tons and 375 ovens, and St. Clair County 6,259 tons and 60 ovens.

The mines of the Empire Coal and Coke Company in Walker County should be shipping coal this week in limited quantities, the Kansas City, Memphis and Birmingham Railroad having completed its 9½-mile branch railroad from Burgin, on the main line, to Democrat, where the property of the Empire Company is located.

Cleveland, O. May 15.

(From Our Special Correspondent.)

The coal movement for the season has started in with a reasonable activity. All of the first cargoes are now being delivered and the reports come from up above that the vessels were so placed and handled that the congestion at the receiving docks which was feared has been avoided. This will result in heavy shipments, especially as it is aided by the condition of the docks at the lower lake ports and the railroads upon whom the shippers depend to get their coal to the lakes. The railroads have plenty of cars for almost any purpose, the rolling stock having been added to greatly during the last few years. The docks at the lower lake ports are also free of any sort of congestion, so that shipments may be made as fast as it pleases the shippers to do so and as the boats may be obtained.

The lake freights are weakening some, owing to the end of the strike of the marine engineers the first of the week. About all of the boats on the lakes which intend to engage in the trade this year are again in service. This is sure to throw a damper over the rates to be received soon and as the shippers have commenced to call for lower freights it is believed that such will be conceded in a short time. The sales agents report that a few more big contracts have been placed in the northwest and that business appears to be generally good.

Pittsburg. May 15.

(From Our Special Correspondent.)

Coal.—There have been no disturbing factors in the coal market during the past week and general conditions are practically unchanged. The shipments of the railroad combination to the Lakes for Northwestern consumers continue larger than ever before and there is every indication that this season's shipments will exceed those of any previous season. The River Coal Company is loading barges at all its mines anticipating the June rise when another big tonnage will be sent South.

Coke.—The total production of coke in the Connellsville Region for the past week amounted to 234,637 tons, showing a decrease in production of 2,464 tons. Out of a total of 21,447 ovens in the region, 19,819 were active and 1,628 idle. The shipments for the week aggregated 10,924 cars, distributed as follows: To Pittsburg and river tipples, 3,306 cars; to points west of Pittsburg, 5,436 cars; to points east of Connellsville, 2,182 cars. This was an incrcase of 387 cars over the previous week. The price of coke remains practically unchanged—$2 for furnace and $2.50 for foundry.

Shanghai, China. Apr. 17.

(Special Report of Wheelock & Co.)

Coal.—We have heard of a few sales of Ichimura (Japan) coal at 7 taels ($4.69) per ton. Cardiff is weaker. Nothing has been done in Sydney Wollongong. Arrivals of all kinds of coal during the fortnight ended April 17th were 32,452 tons. We quote, per ton, as follows: Welsh Cardiff, 20.50 taels ($13.74); Australian Wollongong, 12 taels nominal ($8.04), and other sorts, 6@7 taels ($4.02@$4.69); Chinese Kaiping, Luisi lump, 8 taels ($5.36), and unmixed, 7 taels ($4.69); Tongshan No. 9 lump, 10 taels ($6.90); No. 9 dust, 6 taels ($4.02), and No. 9 mixed, 7.50 taels ($5.03).

Kerosene Oil.—Few spot transactions, but for cargo to arrive a fair business has been done at quotations below. No arrivals this fortnight. Stocks are: American, 64,500 cases; Russian, 412,000 cases, and Sumatra, 121,000 cases; total, 597,500 cases. Quotations, per case, are as follows: American Devoes, 1.93@1.96 taels ($1.29@$1.31); Russian Batum Chops, 1.72½@1.82½ taels ($1.16@$1.22), and bulk oil, loose, 1.27½ taels (85c.), and in 2 tins, 1.65 taels ($1.10); Sumatra Langkat, 2 tins, 1.65½ taels ($1.12), and loose, 1.27½ taels (85c.).

Foreign Coal Markets. May 17.

Nothing new has been given out regarding contracts or charters for export coal. For France there has been little or no inquiry, but business for Italian ports promises to continue good.

Messrs. Hull, Blyth & Co., of London and Cardiff, report as follows under date of May 3d: Owing to the threatened strike of the miners as a protest against the export tax, the coal market has been in a very excited state, and prices all round are ruling high. Quotations are: Best Welsh steam coal, $5.04@$5.28; seconds, $4.80; thirds, $4.56; dry coals, $4.44; best Monmouthshire, $4.44@$4.56; seconds, $4.08@$4.20; best small steam coal, $2.76@$2.88; seconds, $2.52@$2.64; other sorts, $2.04.

The above prices for Cardiff are all f. o. b. Cardiff, Penarth or Barry, while those for Monmouthshire descriptions are f. o. b. Newport, exclusive of wharfage, and are for cash in 30 days, less 2½% discount.

Freight rates are steady and, if anything, rather firmer since last advices. Some rates quoted from Cardiff are: Marseilles, $1.90; Genoa, $1.92; Naples, $1.98; Port Said, $2.16; Singapore, $3.60; Las Palmas, $1.68; St. Vincent, $1.86; Rio Janeiro, $3.60; Buenos Aires, $3.30.

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals and rare elements, see page 642.)

New York. May 17.

Heavy Chemicals.—Usual summer closing of glass works lessens deliveries of soda ash. Export trade in bicarb. soda continues to improve. Sal soda finds ready sale. Bleaching powder is unsettled, and sales are reported at $1.62½@$1.87½ for good stuff, while contract prices hold as below. We quote per 100 lbs. as follows: Domestic soda ash in bulk is worth 2½c. per 100 lbs. less than quotations below:

Articles.	Domestic.		Foreign.
	F.o.b. Works.	In New York.	In New York.
Alkali, 58%.	77½@85	....	85@87½
" 48%.	85@90	....	.....
Caustic Soda, high test....	$1.85@$1.90	.....	1.85@1.87½
powd., 60%	.....	2.75	.....
70@74%.	.....	2.85	.....
98%.	....	3 25	3.75@4.00
Sal Soda	50	60	67½
"conc.	1.25@1.50	....	1.75
Bicarb. Soda..	1.05@1.10	.....	1.37½@3.00
" " extra	3.25@3.50	.....	.....
Bleach Pdr., Eng. prime..	.....	....	2.00@2.16
other brands.	.....	....	1.90@1.95
Chl. Pot cryst	....	8.00@8.25	9.50@9.75
" powd.	....	8.25@8.50	9.75@10.00

Acids.—Nearly all lines show an improvement, and occasionally a little export business is done.

Quotations as below are for large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified

Acetic, No.8	$1.62½	Nitric, 36°	$3.87½
Blue Vitriol.	4.25@4.50	Nitric, 38°	4.12½
Aqua Fortis, 36°	3 62½	Nitric, 40°	4.37
Aqua Fortis, 38°	3 87½	Nitric, 42°	4.75
Aqua Fortis, 40°	4.12½	Oxalic	5.60@5.75
Aqua Fortis, 42°	4.50	Sulphuric, 66°	1.20
Muriatic, 18°.	1.20	Sulphuric, 60°	1.05
Muriatic, 20°.	1.35	" bulk 50° ton	14.00
Muriatic 22°	1.50		

Brimstone.—Very quiet. Spot best unmixed seconds sold at $21.75@$22 per ton, while shipments are higher at $21.50@$21.75, owing to the firmer producing market.

Pyrites.—Domestic pyrites are easier, though demand continues pretty good. Other pyrites are unchanged.

We quote per ton as follows: Mineral City, Va., lump ore, $4.90 per long ton, and fines $4.20 Charlemont, Mass., lump, $5, and fines, $4.75. Spanish pyrites, 12c. per unit delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46@51% of sulphur; American, from 42@44%.

Sulphate of Ammonia.—Fair request. Shipments firmer at $2.75 per 100 lbs. for 25% gas liquor, while prompt sales are made at $2.72½.

Nitrate of Soda.—Much firmer, owing to the advancing market on the coast following the action of the producers' combination in reducing the export quota 25% to the end of this year. That is, the exports in the 9 months April to December, 1901, will be limited to 75% of the total exports of the year ended March 31st, 1902, which in the terms of the agreement of the combination will not exceed 31,273,000 Spanish quintals. This will lessen the available supply by 100,000 tons as compared with last year, while the world's consumption is increasing. To-day New York spot quotations are $1.83¾ per 100 lbs., while futures have risen to $1.90@$1.92½, according to quantity and position. There has been little buying at these figures, as consumers anticipate lower prices while importers are not anxious sellers. The "Nordkyn" arrived at Charleston with 34,750 bags, and is expected at New York next week. The European market has assumed an advancing tendency.

The Liverpool Nitrate Company, Limited, has paid a dividend of 7½%.

Concerning the Chile nitrate of soda industry, Messrs. Jackson Brothers, of Valparaiso, write us under date of April 8th, as follows: After a few sales of near deliveries 95% at 5s. 11d. alongside, producers raised their ideas to 5s. 11½d. but without success, and they had shortly to lower their pretensions, a small business again resulting at the previous limits of 5s. 11d. alongside. The demand, however, has not been general, more willingness being shown at the close on the part of sellers to meet buyers. Season deliveries in monthly parcels have been offered at 6s. steamer terms, but, owing to the high freights ruling for that shipment, scarcely anything has been done. The refined quality is not in demand for the moment. Exports for March are advised as 1,833,000 qtls., making a total for the year of 6,167,500 qtls., as against 6,637,000 qtls. during the same period last year. The deliveries in European consuming markets for March have been 5,489,000 qtls., as against 4,484,000 qtls. in same month of 1900. We quote 95% April-June, 5s. 10½d, July-December, 5s. 11½d., and 96% any delivery at 6s. 1½d., all ordinary terms. The price of 5s. 10½d. with an all round freight of 24s. stands in 7s. 9d. per cwt. net cost and freight without purchasing commission. Reported sales for the fortnight ended April 8th aggregate 217,000 qtls.

Potash Salts.—Contract deliveries are regular at agents' prices as follows for New York, Boston or Philadelphia shipment: Muriate of potash, 80@85%, $1.83 per 100 lbs.; muriate of potash, 95%, $1.86; sulphate of potash, 90%, $2.11; sulphate of potash, 96%, $2.13 per 100 lbs.; double

manure salt, 48@53%, $1.12 per 100 lbs.; kainit, testing 12.4% actual potash, $9.05 per long ton; sylvinit, 38½c. per unit of sulphate of potash; manure salt, 20% actual potash, 66c. per 100 lbs.

Phosphates.—The market is disturbed by the quiet manipulation of people who are speculatively inclined and who look for higher prices by controlling production. It appears that the Mt. Pleasant, Tenn., deal, engineered by Messrs. Rogers, Holloway & Company, leading phosphate exporters of Philadelphia, will likely go through successfully. This deal is virtually a consolidation of all the mines in the district. Similar negotiations were attempted by other leading exporters in the Florida hard rock region, but as yet without success. A stumbling block is the high cash price asked by miners, as they are not inclined to accept stock in the promoters' company. While these consolidation schemes are in progress our export business in both Florida and Tennessee rock shows an improvement over last year, owing partly to the lower freight rates, but more likely to the low prices at which miners have lately been selling. Recent charters include 1,095 tons from Fernandina to Ghent at 14s. 1½d. ($3.39); also the British steamer, "City," of 1,875 tons, from Fernandina and Norfolk to London or Rotterdam at 11s. ($2.64), and 6d. (12c.) extra if both ports; or if New York loading to Hamburg or Rotterdam, 9s. 6d. ($2.28), and if both ports, 10s. ($2.40), having 15 days to load and discharge, sailing June 5th.

Phosphates.	Per Ton F. o. b.	C i. f. Un'd Kingdom or European Ports.	
		Unit.	Long ton.
*Fla. hard rock (77@80%)	$6.50@7.00	7 @7½d	$10.87@11.70
*Fla. land pebble (68@73%)	3.85@4.00	6½@6¾d	8.58@8.75
*Fla. Peace River (58@63%)	2.50@2.75	6½@6¾d	7.35@7.50
†Tenn. rock 78%, export.	3.25@3.50	6¾@7d	10.53@10.92
†Tenn. 78% domestic.	3.00	.....	.....
†Tenn. 75% "	2.75	.....	.....
†Tenn. 70@72% "	2.00@2.50	.....	.....
‡So. Car. rock, crude	2.50@2.75	.....	.....
§So. Car. rock, dried	3.25	6d	7.00
Algerian, rock (63@70%)	.....	6½@7d	8.71@9.30
Algerian, rock (58@63%)	.....	6 @6½d	7.20@7.80
Tunis, Gafsa	.....	6 @6½d	7.20@7.80

* Fernandina, † Mt Pleasant. ‡ At mines. § On vessels, Ashley River.

Liverpool. May 8.

(Special Report of Joseph P. Brunner & Co.)

There is a better export inquiry for caustic soda, and sulphate of ammonia has further improved in price, while other lines are quiet and unchanged. The following are the Board of Trade returns of exports of bleaching power and sodas for the month ending April 30th: Bleaching powder—Total exports to all quarters including United States, 66,747 cwts.; shipments to United States alone, 43,053 cwts.; soda ash, 99,330 cwts.; caustic soda, 91,067 cwts.; bicarb. soda, 24,454 cwts.; soda crystals, 11,610 cwts.; sulphate of soda (saltcake), 25,384 cwts.; other sorts, 23,852 cwts.; total, 275,697 cwts. The exports are the smallest of any month this year with the exception of February, and as compared with April, 1900, the decrease is very marked.

Soda ash is in fairly good request at usual varying prices, according to destination. We quote nearest spot value for tierces about as follows: Leblanc ash, 48%, £5 15s.@£6; 58%, £6 2s. 6d.@£6 7s. 6d. per ton, net cash. Ammonia ash, 48%, £4 10s.@£4 15s.; 58%, £4 15s.@£5 per ton, net cash. Bags, 5s. per ton under price for tierces. Soda crystals find a steady sale at £3 7s. 6d. per ton, less 5% for barrels, or 7s. less for bags, with special terms for certain export quarters. Caustic soda is moving off more freely and values are unchanged as follows: 60%, £9 5s.; 70%, £10 5s.; 74%, £10 15s.; 76%, £11 per ton, net cash.

Bleaching powder is very idle, but quotations remain nominally unchanged at £7@£7 5s. per ton, net cash for hardwood packages, with special terms for Continental and a few other export markets.

Chlorate of potash is offering at 3⅜d. per lb. net cash, but orders continue scarce.

Bicarb. soda is unchanged and selling at £6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowances for larger packages, and special terms for a few favored markets.

Sulphate of ammonia is strong at £10 17s. 6d. @£11 per ton, less 2½% for good gray 24@25% in double bags f. o. b. here, and buyers experience a difficulty in placing orders, as holders double bags f. o. b. here, as to quality and quantity.

Messina, Sicily. May 1.

(Special Report of Emil Fog & Sons.)

Brimstone.—Quiet throughout April. Shipments on old contracts were active, but as shippers preferred clearing their old stock rather than buy on the market, relatively few and small offerings from dissidents produced a decline in prices of 1s. 6d. to 2s. all round. The Anglo-Sicilian Company, as in the past, let the market go. At Catania, where the stock is 30,000 tons less than last year, the Anglo-Sicilian Company has shown precipitous haste in clearing its old stock at below market rates. Now prices are recovering.

For delivery after the new melting begins (August-September), there are sellers at 1s. to 1s. 6d. below current prices.

Freight begin to stiffen, higher rates being asked, though not yet paid. New York, 6s. 9d. ($1.62); Philadelphia and Baltimore, 7s. ($1.68); Canadian ports, 8s. ($1.92), and Baltic, 10s. ($2.40).

We quote crude and refined sulphur as follows, per ton, f. o. b.: Best unmixed seconds, 77s. ($18.48); best thirds, 68s. ($16.32); refined block sulphur (100%), 82s. 6d. ($19.80); refined roll, in casks, 90s. ($21.60); sublimed flowers, extra pure, in kegs, 98s. 6d. ($23.64); sublimed, superior, 96s. ($23.04); sublimed, current, 94s. ($22.56).

IRON MARKET REVIEW.

NEW YORK, May 17, 1901.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending May 18, 1900.		Week ending May 17, 1901.		From Jan., '00.	From Jan., '0
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons.
An' racite & Coke.	266	288,525	233	294,125	5,668,558	5,383,070
Charcoal.	24	6,250	23	7,225	143,547	153,830
Totals..	290	294,775	256	301,350	5,812 105	5,536,900

The iron market has settled down into temporary quiet. Contracts for the first half of the year have generally been closed, and there is the usual hesitation about settling terms for the second half. As usual, buyers want concessions, while sellers are not disposed to make them. Reports of some shading on large contracts are current, but cannot be traced to any reliable source. Buyers also intimate that they are uncertain about the volume of business in the second half of the year, but that is simply the usual talk.

Foundry iron buying has been on a limited scale, but bessemer and basic pig are still in demand. Steel billets are scarce, though few new orders have been placed. Complaint is made of slow deliveries on contracts.

The Wall Street flurry has not affected the iron market seriously. Some speculative enterprises may be cut off, but the general run of business has not felt the trouble.

Birmingham, Ala. May. 13.

(From Our Special Correspondent.)

The feature of the iron trade is the activity in the finished iron trade and the cast iron pipe business. The rolling mills and the pipe factories are busy. There are no indications of a sudden termination of this condition and no iron is being stocked. The shipments being made from the rolling mills are extensive.

There is much work being done at Ensley, 5 of the 10 open-hearth furnaces at the big steel plant being still in operation. The steel wire, rod and nail mill continues in activity, and there is not much stock accumulating. A strike among a number of machinists and patternmakers at the steel plant has so far disturbed the plant but little. The plow factory at Ensley, which uses a small quantity of steel daily, is building a large addition to its plant, and the buildings will shortly be ready for the introduction of the machinery. The work on the new steel rail mill adjoining the steel mill nears completion.

The Southern Iron Committee made public its report of the shipments of pig iron and cast iron pipe from Alabama and Tennessee during the month of April last week. The statement makes the following showing: Total shipments of pig iron and cast iron pipe from Alabama and Tennessee, 153,380 tons, of which 138,427 tons were pig iron and 14,953 tons cast iron pipe. The pig iron shipments by districts were as follows: Anniston, 14,951 tons; Birmingham, 78,435 tons; Nashville, 5,667 tons; Sheffield, 17,593 tons; Middlesboro, 491 tons; Chattanooga, 21,290 tons. The export pig iron shipments amounted to 1,725 tons, of which Anniston sent out 293, Birmingham 1,412, and Chattanooga 20 tons. An increase is shown in the pig iron shipments as compared to the same month in 1900, while a decrease is shown in the export movement. As to cast iron pipe shipments, the following were made by districts: Anniston, 3,464 tons; Birmingham, 7,710 tons; Chattanooga, 3,779 tons. Export pipe shipments were Anniston 244 tons and Birmingham 330 tons. The report shows that 5,431 tons of steel billets were shipped from Ensley and 38 from Middleboro.

The quotations are still firm and are given as follows: No. 1 foundry, $11.75@$12.50; No. 2, $11.25@$11.75; No. 3, $10.50@$11.25; No. 4, $10@$10.35; gray forge, $10; No. 1 soft, $11.75@$12.50; No. 2 soft, $11.25@$11.50.

Buffalo, N. Y. May 15.

(Special Report of Rogers, Brown & Co.)

Sales of foundry iron during the past week have been very light, being mostly of the carload and 100-ton variety, and in almost every case accompanied by a request for immediate shipment. Foundries throughout the district, however, are crowded with orders and working full capacity. The consumption of pig iron is unusually heavy and shipments on existing contracts continue at a rapid rate. There has been a noticeable increase in inquiries for malleable and charcoal iron, a number of the larger melters of this class of iron having come into the field within the past few days. We quote below on the cash basis, f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $16; No. 2, $15.50; Southern soft, No. 1, $16.50; No. 2, $16; Lake Superior charcoal, $18; coke malleable, $16.

Cleveland, O. May 15.

(From Our Special Correspondent.)

Iron Ore.—The ore interests of the United States Steel Corporation have given notice to the vessel owners that hereafter all contracts placed must be on a basis of 70c. from Duluth. They had previously covered about 3,000,000 tons at 80c. and this is equivalent to the statement that no more ore will be contracted for, as the vessel men have greater faith in the wild rates to be obtained than to take the reduced rate on contract ore. The wild charters that have been made of late have all been on the old basis. The first cargo of ore from the upper lake ports reached this city yesterday and the first boats of the ore fleet are just beginning to reach the lower ports. This means that the ore shipping interests are about 1,500,000 tons behind what they had down the lakes last year. The docks contain in addition about 3,000,000 tons left over, so that the amount now on the docks is really in excess of what it was this time a year ago.

Pig Iron.—The sales this week have been confined to small orders of the foundry grades. The tonnage is light, but the furnacemen are not discouraged and have no forebodings for the future. The capacities of most of the stacks are sold up until the last of June. Beyond that time the buyers have not commenced to cover their needs so far as all believe, the furnacemen included, that the prices will be marked down. This is based upon the fact that the producing capacity is to be enlarged greatly during the last half of the year. Prices hold firm as follows, all quotations being Valley furnace: Bessemer, $16.50, nominal; basic, $16, nominal; foundry No. 1, $15.25; foundry No. 2, $14.75.

Finished Material.—Although all other prices show a tendency to go lower than they are now being quoted the principal factors in the finished material trade show up as strongly as they have heretofore, no intimations of any reductions being heard. All interests now look for a continuance of present prices at least for the remainder of the year should the sales continue to indicate the same healthy state of business they now do. Already many of the concerns have received orders enough to place them beyond the reach of concerns for the next eight months and those which have not have such within their easy reach. The trade this week has been a little heavier than it was at the time of the last report, although no large sales or contracts have been reported. Some noticeable activity in structural material was shown earlier in the week and a satisfactory tonnage was closed for at that time. Specification on former orders has been satisfactory. Plates and bars have been sold in small quantities, but only those who have immediate and urgent need of material are going upon the market to bid for it at this time. A few sales of rails were also made during the week, but the tonnage in comparison with that of recent weeks was a decided falling away from the earlier business. The prices remain as they have been at 1.60, Pittsburg, for plates and structural shapes; 1.45 for bars, and $28 for rails.

Old Irons.—The scrap trade has been very dull of late, the sales being made in small quantities when a purchaser could be found. The market is very weak, but prices have not yet broken, although they are expected to do so soon. These remain as follows: Steel rails, $16.50; iron rails, $20; No. 1 wrought, $16.50; machinery cast, $13; wrought turnings, $10; cast borings, $6.

Philadelphia. May 16.

(From Our Special Correspondent.)

Pig Iron.—Local brokers and makers of pig iron pretty generally agree to-day as to the immediate outlook. There is no concern in eastern or middle Pennsylvania that is forcing sales. Among larger users there is at present very little buying. Foundry interests, while satisfied with the season's development thus far, see no reason for extending their contracts. The rumor got out somehow that certain makes of iron had been shaded since last week, but the makers and their agents to-day positively deny that iron has been offered below quotations prevailing. Large buyers say that while this may be true it does not explain the situation. The turning point for steady or weaker prices will be reached in June, they say, when both forge and foundry buyers are expected to take some action toward covering needs up to the end of the year. The general inclination is to wait and see. While the stock collapse has had scarcely any influence, the feeling here is that a repetition of such things might precipitate unknown evils. The range of prices may be safely given at $16 for No. 1 X foundry; $15.50 for No. 2 X; $15 for No. 2 plain; $14.50 for standard forge and

any influence, the feeling here is that a repetition of such things might precipitate unknown evils. The range of prices may be safely given at $16 for No. 1 X foundry; $15.50 for No. 2 X; $15 for No. 2 plain; $14.50 for standard forge and about that figure for basic. Standard bessemer is $15, but some parties think they see weakness.

Billets.—Some new business was done this week for the latter half of the year, but present prices are regarded as $1 too high. The consumption of crude steel was never as great, but most users are pretty well fixed for the present.

Bars.—The bar iron people repeat their old statements, though some mills are not getting quite as much business. There is no cutting of prices yet, but buyers think the desire of manufacturers to keep work ahead will soon result in something less than 1.50c. for iron. Steel bars are selling this week at 1.65c.

Skelp.—Large lots of skelp are being hurried to contractors and others. All mills are busy. The price is just a trifle more than large buyers think it can be kept at.

Pipes and Tubes.—All our plants are reported at work. The capacity has been strained for the accommodation of certain buyers. The orders booked this week were at the top notch price.

Plates.—Parties who are on the trade picket line brought back some very good news this week—though not as definite as the office men would like—respecting large orders that will be here late in June or early July. The general feeling here is that the plate demand will keep all mills on full right along. Quarter-inch might under certain circumstances go at 1.75. Flange is being used up fast and the average is not far from 2c.

Structural Material.—The capacity of this branch of the steel trade is to be greatly enlarged, but railroad and ship-building requirements we are assured warrant it.

Steel Rails.—Girder orders are now in sight, but there is some wabbling on terms. Instances have occurred again where more than $28 is offered for standard sections.

Scrap.—Scrap is falling back. March and April prices are hard to get. Heavy steel and railroad scrap are both out of the market. Choice railroad is wanted at $19; heavy steel, $17; wrought turnings have been selling at $12 and machinery cast at $14. There are no old wheels or axles about.

Pittsburg. May 15.

(From Our Special Correspondent.)

While the buying movement has fallen off considerably in both raw and finished materials, the mills are not feeling this and are operating in full on contracts placed months ago. In steel bars the tonnage placed was comparatively small as compared to that of two weeks ago and some of the agricultural implement manufacturers are inclined to hold off placing their contracts, anticipating somewhat lower prices before the end of the month or during June. In structural and plates there is more activity than in any of the lines of finished products, due to the great amount of building that is being carried on at the present throughout the country. The pig iron market also continues quiet. The United States Steel Corporation has figured as a large buyer of basic iron during the week for delivery during the second half of the year. There has been little doing in bessemer iron.

Pig Iron.—The pig iron market continues quiet. The sales of bessemer during the past week amounted to approximately 5,000 tons at $16 at Valley furnace, or $16.75 delivered, Pittsburg. The sales of gray forge iron amounted to about 1,000 tons at $14.75, Pittsburg. The foundrymen continue to buy small lots of foundry iron and the sales of the week amount to about 2,000 tons at $15.25 to $15.50, delivered, Pittsburg.

Steel.—Independent consumers have been buying steel billets quite heavily during the past week. Sales aggregating nearly 5,000 tons have been made at $24 per ton at mill, Pittsburg. Open-hearth billets are held at $26 per ton.

Ferro-manganese.—There has been no change in the price of manganese, the largest producer continuing to quote $58.50 per ton delivered at buyer's mill.

Sheets.—The demand for both black and galvanized sheets continues very strong and manufacturers find it almost out of the question to make prompt deliveries. No. 28 gauge black sheets are quoted at 3.35c. and galvanized sheets are held at 70 and 5s. off.

New York. May 17.

Pig Iron.—There is no change of note in the market, which continues rather quiet. We quote as follows: Northern irons, tidewater delivery: No. 1 X foundry, $16@$16.50; No. 2 X, $15.25@$15.75; No. 2 plain, $14.75@$15.25; gray forge, $14.50@$14.75. For Southern irons on dock, New York, No. 1 foundry, $16@$16.50; No. 2, $15.50@$15.75; No. 3, $14.75@$15.25; No. 4, $13.75@$14.25; No. 1 soft, $16@$16.50; No. 2, $15.50@$15.75.

Bar Iron and Steel.—Prices are pretty firm, with business good. We quote common bars at 1.50c. for large lots on dock; refined bars, 1.58c.; soft steel bars, 1.55c.

Plates.—Business is quite good; prices are firm. Eastern mills quote for large lots at tidewater: Tank, ¼-in. and heavier, 1.78c.; flange, 1.88c.; marine, 1.98c.; universals, 1.78c.

Steel Rails and Rail Fastenings.—Further orders from domestic users are expected. Mills are busy and prices firm. Standard sections are quoted at $28 at Eastern mills; light rails at $28@$30 according to weight. Spikes are 1.60c.; splice bars, 1.40c.; bolts, 2.10@2.25c.

Structural Material.—Buying, particularly in small lots, holds up well. We quote for large lots at tidewater as follows: Beams, 1.75c.; channels, 1.75c.; tees, 1.80c.; angles, 1.75c.

METAL MARKET.

New York. May 17.

Gold and Silver.

Gold and Silver Exports and Imports
At all United States ports in April and year.

Metal.	April.		Year.	
	1900.	1901.	1900.	1901.
GOLD.				
Exports	$1,961,580	$4,916,965	$10,137,808	$14,046,005
Imports	3,388,813	2,222,606	9,213,657	10,700,911
Excess	I. $1,427,233	$2,694,359	E. $924,151	E. $3,345,094
SILVER.				
Exports	4,112,043	4,959,047	19,116,508	19,479,971
Imports	3,323,808	2,346,661	11,488,560	11,077,355
Excess	E. $788,235	E. $2,612,386	E. $7,627,948	E. $8,402,616

These figures include the exports and imports at all United States ports, and are furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York
For the week ending May 16th, 1901, and for years from January 1st, 1901, 1900, 1899 and 1898.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$1,216,000	$33,246	$557,485	$71,474	E. $1,668,765
1901..	18,122,994	1,064,138	13,464,915	1,552,561	E. 28,971,210
1900..	12,915,072	1,351,669	14,978,454	1,720,341	E. 24,821,516
1899..	2,150,314	5,914,199	10,238,391	1,143,239	E. 5,331,267
1898..	4,436,939	66,314,610	13,525,194	1,720,800	I. 50,073,347

Exports of gold for the week were chiefly to Germany; of silver to London. Imports of both gold and silver came from the West Indies and Mexico.

The United States Assay Office in New York reports the total receipts of silver at 113,000 oz. for the week. This makes a total of 1,441,000 oz. from January 1st.

Average Prices of Silver per oz. Troy.

Month.	1901.		1900.		1899.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January...	28.97	62.82	27.30	59.30	27.42	59.36
February..	28.13	61.06	27.49	59 76	27.44	59.42
March.....	27.94	60 63	27.59	59.81	27.48	59.64
April.....	27.30	59 29	27.41	59.59	27.65	60.10
May.....	.....	.....	27.56	59.96	28.15	61.23
June.....	.....	.....	27.31	60.42	27.77	60.43
July.....	.....	.....	28.23	61.25	27.71	60.26
August....	.....	.....	28.13	61.14	27.62	60.00
September	.....	.....	28.85	62.63	27.15	58.89
October ..	.....	.....	29.58	63.83	26.70	57.98
November	.....	.....	29.66	64.04	27 02	58.67
December.	.....	.....	29.68	64.14	27.21	58.99
Year....	.....	.....	28.27	61.33	27.44	59.58

The New York prices are per fine ounce; the London quotation is per standard ounce, .925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER.		TIN.		LEAD.		SPELTER.	
	1901.	1900.	1901.	1900.	1901.	1900.	1901.	1900.
Jan.....	16.25	15.58	26.51	27.07	4.35	4.68	4.13	4.65
Feb.....	16.38	15.78	26.68	30.58	4.35	4.675	4.01	4.64
March...	16.42	16.29	26 03	32.90	4.35	4.675	3.92	4.60
April....	16.43	16.76	25.93	30.90	4.35	4.675	3.98	4.71
May.....	.....	16.34	.....	29.37	.....	4.181	.....	4.53
June.....	.....	15.75	.....	30.50	.....	3.901	.....	4.29
July.....	.....	15.97	.....	33.10	.....	4.030	.....	4.28
August...	.....	16.35	.....	31.28	.....	4.250	.....	4.17
Sept.....	.....	16.44	.....	29.42	.....	4.350	.....	4.11
October..	.....	16.37	.....	28.54	.....	4.350	.....	4.15
Nov.....	.....	16.40	.....	28.25	.....	4.350	.....	4.29
Dec.....	.....	16.31	.....	26.94	.....	4.350	.....	4.25
Year.....	.....	16.19	.....	29.90	.....	4.37	.....	4.39

The prices given in the table for copper are the averages for electrolytic copper. The average price for Lake copper for the year 1900 was 16.52c.; for the month of January, 1901, it was 16.77c.; for February, 16.90c; for March, 16.94c.; for April, 16.94c.

Prices of Foreign Coins.

	Bid.	Asked.
Mexican dollars	$ .48½	$ .50½
Peruvian soles and Chilean pesos	.43½	.46½
Victoria sovereigns	4.85	4.88
Twenty francs	3.84	3.88
Twenty marks	4.75	4.80
Spanish 25 pesetas	4.78	4.82

Financial Notes of the Week.

The effect of the Wall Street upheaval of last week is apparent in a general depression of the speculative markets, which to some extent affects general business. It will take some time to recover from the trouble, so far as the stock exchanges are concerned.

The demand for money in London is very strong, and it is quite possible that the negotiations of loans and sale of securities here may

Imports and Exports of Metals.

Port.	Week, May 15.		Year 1901.	
	Expts.	Impts.	Expt.	Impts.
New York.				
(N. Y. Metal Exchange.)				
Aluminum.....long tons	2	.....	43	50
Antimony ore... " "	.....	.....	.....	263
" regulus.. " "	.....	15	19	425
Copper, fine ..... " "	1,057	300	21,930	6,372
" matte.. " "	118	.....	2,261	50
" ore..... " "	.....	3,950	.....	17,340
" ash..... " "	.....	.....	.....	.....
Iron ore ..... " "	.....	.....	.....	75
" pig, bar, rod " "	356	41	9,527	1,018
" plates, sheets " "	159	.....	408	.....
Lead..... " "	1,055	1,635	29,667	20,595
" ore..... " "	.....	.....	.....	.....
Manganese, ore. " "	.....	.....	100	4,727
Metals, old, scrap " "	63	18	1,211	891
Composition... " "	17	40	3,466	171
Nails..... " "	244	.....	4,364	.....
Nickel ..... " "	128	.....	886	35
" ore, matte " "	.....	8,954	.....	22,249
Pipe, iron & steel " "	356	.....	7,763	.....
Railr'd material. " "	131	25	9,523	927
Rails, old..... " "	.....	.....	.....	.....
Steel bars, plates " "	1,574	518	27,145	5,263
" rails. ..... " "	1,320	.....	40,474	.....
" wire..... " "	812	.....	13,271	.....
Tin ..... " "	.....	1,485	230	11,779
" and black plates " "	.....	485	.....	11,083
" dross..... " "	.....	.....	.....	.....
Zinc..... " "	.....	203	537	792
" dross..... " "	.....	.....	128	.....
" ashes, skim " "	.....	.....	316	.....
" ore..... " "	.....	.....	8,160	.....
Baltimore.				
(Special Correspondence).				
Antimony.....long tons	.....	.....	.....	10
Chrome Ore..... " "	.....	.....	.....	4,036
Copper, fine..... " "	766	372	9,757	2,876
Iron pig, bar, etc. " "	73	275	1,291	2,444
" ore..... " "	.....	19,197	.....	134,124
Manganese ore.. " "	.....	5,452	.....	28,986
Nails ..... " "	.....	.....	306	.....
Pipe, iron & steel " "	104	.....	905	.....
Spiegeleisen..... " "	.....	201	.....	1,341
Steel, bars, etc.. " "	66	6	31,905	78
" wire ..... " "	.....	.....	670	102
" rails..... " "	1,363	.....	49,417	.....
Tin..... " "	.....	.....	.....	175
" and blackplates " "	.....	.....	.....	143
Philadelphia.				
Chrome ore.....long tons	.....	.....	.....	195
Copper, fine..... " "	.....	.....	523	.....
" ore..... " "	.....	2,508	.....	16,093
Iron, pig, bar.... " "	18	195	248	2,565
" ore..... " "	.....	14,757	.....	83,227
" pipe ..... " "	.....	.....	1,880	.....
Lead..... " "	.....	.....	200	.....
Manganese ore.. " "	.....	.....	.....	3,275
Metals, old..... " "	.....	.....	29	701
Nails ..... " "	.....	.....	87	.....
Pipe, iron & steel " "	.....	.....	500	.....
Railroad material " "	.....	.....	175	.....
Steel, bars, etc.. " "	.....	.....	4,177	.....
" rails ..... " "	.....	.....	3,776	.....
" wire ..... " "	34	.....	294	.....
Tin ..... " "	.....	.....	.....	260
" and black plates " "	.....	21	.....	341
Zinc ore..... " "	.....	.....	2,064	.....
" dross ..... " "	.....	.....	106	.....
" ash..... " "	.....	.....	32	.....

Total United States.

Articles.	March.		Year., 1901.	
	Expts.	Impts.	Expts.	Impts.
Antimony.....long tons	.....	69	.....	399
" ore..... " "	.....	.....	21	119
Copper, in all forms..... " "	6,818	25,539	23,274	38,029
Iron, pig & bar.. " "	6,215	3,196	42,247	8,564
" ore..... " "	805	47,379	1,647	120,107
Iron & steel plates " "	6,357	121	15,570	429
Iron & steel rails " "	35,451	.....	84,848	117
" " wire " "	6,915	1,251	18,533	2,205
Lead, in all forms " "	8,840	9,495	27,046	32,916
Manganese ore and oxide..... " "	.....	13,447	.....	22,728
Nickel " & matte " "	165	9,724	539	13,324
Nails, cut..... " "	1,531	.....	5,029	.....
" wire ..... " "	1,406	.....	4,456	.....
Quicksilver..... " "	41	.....	106	.....
Steel, billets, rods, etc..... " "	4,397	2,022	25,174	5,403
Tin ..... " "	24	2,885	400	8,662
" & black plates " "	49	2,121	410	12,972
Zinc ..... " "	624	1	1,315	131
" ore ..... " "	1,308	.....	8,479	.....

Import Duties on Metals.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1½c. a lb. on lead in ores; 2½c. a lb. on pigs, bars, etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. a lb. Quicksilver, 7c. a lb. Spelter or zinc, 1½c. a lb. on pigs and bars, 2c. on sheets, etc. Copper, tin and platinum are free of duty.

result in further shipments of gold from New York.

Silver has shown no special feature. The market shows, however, a slight degree of firmness. Futures are well maintained and forward deliveries command a slight premium.

The statement of the United States Treasury on Wednesday, May 15th, shows balances in excess of outstanding certificates as below, compared with the corresponding day last week:

	May 8.	May 15.	Changes.
Gold	$98,335,659	$97,154,507	D. $1,181,152
Silver	17,557,490	18,713,160	I. 1,155,670
Legal tenders	9,919,378	10,687,356	I. 767,978
Treas. notes, etc.	97,204	121,405	I. 24,201
Totals	$125,909,731	$126,676,428	I. $766,697

Treasury deposits with national banks amounted to $101,283,435, showing a decrease of $403,678 as compared with the corresponding day last week.

The statement of the New York banks—including the 63 banks represented on the Clearing House—for the week ending May 11th give the following total, comparison being made with the corresponding week in 1900 and 1899:

	1899.	1900.	1901.
Loans and discounts	$770,746,100	$787,482,100	$897,716,300
Deposits	901,502,300	867,246,300	977,490,900
Circulation	13,827,500	21,308,100	31,081,100
Reserve:			
Specie	196,644,300	163,790,700	179,760,700
Legal tenders	55,883,900	68,353,600	72,739,500
Total reserve	$252,528,200	$232,144,300	$252,500,200
Legal requirements	225,390,575	216,811,575	244,372,725
Balance, surplus	$27,137,625	$15,332,725	$8,127,475

Changes for the week, this year, were increases of $7,266,500 in loans and discounts, $4,379,300 in deposits, and $784,200 in legal tenders; decreases of $51,800 in circulation, $2,542,600 in specie, and $2,852,625 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars and comparison is made with the holdings at the corresponding date last year:

	1900.		1901.	
Banks.	Gold.	Silver.	Gold.	Silver.
N. Y. Ass'd	$163,790,700	.....	$179,760,700	.....
England	161,620,915	.....	177,300,790	.....
France	392,963,080	$227,841,440	480,588,200	$220,937,470
Germany	134,640,000	69,360,000	151,700,000	78,150,000
Spain	68,445,000	78,735,000	70,010,000	83,065,000
Neth'l'ds	24,335,000	29,755,000	25,287,500	28,872,000
Belgium	14,955,000	7,480,000	15,255,000	7,630,000
Italy	77,265,000	8,175,000	76,080,000	9,623,500
Russia	419,160,000	36,360,000	355,960,000	36,050,000

The returns of the Associated Banks of New York are of date of May 11th and the others are of date of May 9th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold. The Bank of England reports gold only.

The merchandise exports of the United States in April were valued by the Treasury Department at $120,780,590, being $3,690,084 less than in March, but $2,008,010 more than in April, 1900. For the 10 months of the fiscal year from July 1st to April 30th the statement is as follows:

	1900.	1901.
Exports	$1,172,403,276	$1,261,449,248
Imports	717,286,292	676,236,942
Excess exports	$455,116,984	$584,212,306
Add excess of exports, silver		23,621,443
Total		$607,833,747
Deduct excess of imports, gold		23,218,586
Apparent balance		$584,615,161

The gold and silver movement in detail will be found in the usual place, at the head of this column.

Shipments of silver from London to the East for the year up to May 2d, 1901, are reported by Messrs. Pixley & Abell's circular as follows:

	1900.	1901.	Changes.
India	£1,797,862	£2,812,210	I. £1,014,348
China	265,324	314,125	I. 48,801
The Straits	110,452	79,976	D. 30,476
Totals	£2,173,638	£3,206,311	I. £1,032,673

Arrivals for the week, this year, were £220,000 in bar silver from New York, and £14,000 from Chile; total, £234,000. Shipments were £53,000 in bar silver to Bombay.

Indian exchange has been somewhat stronger, owing to a demand for money in India, and Council bills were taken in London at 15.94d. per rupee. With exchange at this level it has once again become profitable to export gold from Australia to India, and a fair amount has been arranged for shipment this week. This, of course, means that renewed applications will be made for silver rupees at the currency department, and this may cause the Indian Government to reappear in the silver market.

Other Metals.

Daily Prices of Metals in New York.

May.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London. Pence.	Copper. Lake. cts. ₱ lb.	Copper. Electrolytic ₱ lb.	Copper. London £ ₱ ton.	Tin. cts. ₱ lb.	Lead cts. ₱ lb.	Spelter. N. Y. cts. ₱ lb.	Spelter. St. L. cts. ₱ lb.
11	4.87¾	59⅜	27 5/16	16⅞ @17	16.35 @16.45	....	26⅜	4.32½ @4.37½	4.05	3.87½
13	4.87¾	59½	27⅜	16⅞ @17	16.35 @16.45	69¾	26½	4.32½ @4.37½	4.05	3.87½
14	4.88	59¾	27½	16⅞ @17	16.35 @16.45	69½	26¾	4.32½ @4.37½	4.05	3.87½
15	4.87¾	59½	27⅜	16⅞ @17	16.35 @16.45	69⅝	26⅝	4.32½ @4.37½	4.05	3.87½
16	4.87¾	59½	27⅜	16⅞ @17	16.35 @16.45	69⅞	26¾	4.32½ @4.37½	4.05	3.87½
17	4.87¾	59¾	27½	16⅞ @17	16.35 @16.45	69½	27	4.32½ @4.37½	4.05	3.87½

London quotations are per long ton (2,240 lbs.) standard copper, which is now the equivalent of the former g. m. b's. The New York quotations for electrolytic copper are for cakes, ingots or wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market remains quiet. The manufacturers in this country are very busy and report the prospects for the summer months as favorable. They are, however, not buying at the moment, their wants being covered for the present. The European demand has improved somewhat, and some fair-sized orders have been received, both from the Continent and England. We quote Lake copper at 16⅞@17c.; electrolytic copper in cakes, wirebars and ingots at 16.35@16.45c.; in cathodes at 16.10@16.20c.; casting copper at 16¼@16⅜c.

The market for Standard copper in London, which closed last week at £69 10s. for spot, and £70 for three months, opened at £69 15s. for spot and £70 5s. for three months. It fluctuated but very little during the week and closed at £69 13s. 9d. for spot and £70 5s. for three months.

Refined and manufactured sorts we quote: English tough, £73 15s.@£74 5s.; best selected, £75 10s.@£76; strong sheets, £84@£84 5s.; India sheets, £80@£80 5s.; yellow metal, 7d.

The statistics for the first half of May show a decrease of 800 tons.

Copper production, as reported by Mr. John Stanton, who acts as statistician for the producing companies, was as follows for April and the four months ending April 30th, stated in long tons (2,240 lbs.), of fine copper:

	April. 1900.	April. 1901.	4 months 1900.	4 months 1901.
U. S., reporting mines	20,667	18,038	75,660	75,101
U. S., outside sources	3,400	3,400	13,600	13,600
Total, U. S	24,067	21,438	89,260	88,601
Foreign, reporting mines	7,352	8,810	29,905	29,869
Totals	31,419	30,248	118,165	118,470
Exports, U. S	12,764	4,849	59,646	28,123

The reported production in the United States in April was 1,946 tons less than in March, and 2,629 tons less than in April, 1900. For the four months the United States production shows a decrease of 659 tons as compared with the corresponding period in 1900. The foreign reporting mines show an increase for the four months of 964 tons. There was a remarkable falling off this year in exports from the United States, the decrease for the four months having been 31,523 tons, or 52.9%, this year.

Tin.—The market has been quiet but strong. Prices have fluctuated somewhat in sympathy with the London market, and while not much business has been done, the undertone has been firm. We quote 27c. for spot, and 26¾c. for futures.

The London market, which closed last week at £120 7s. 6d. for spot, and £117 17s. 6d. for three months, opened 12s. 6d. higher, and advanced on Monday at £122 5s. for spot, and £119 10s. for three months. On Wednesday it declined 10s. and it closes at £123 10s. for spot, and £121 for three months.

Lead.—The market is without change. We quote St. Louis 4.22½@4.32½c.; New York 4.32½@4.37½c.

The quotations for Spanish lead are cabled as £12 3s. 9d.@£12 6s. 3d.; English lead 2s. 6d. higher.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is firm and fairly active. There appears to be a pretty good demand for prompt lead, and in consequence Missouri brands are now worth 4.25c., while desilverized lead is unchanged at 4.32½c.

Spelter.—Consumption continues to be very good and a fair business is reported. Prices remain unchanged, and we quote 3.85@3.87½c. St. Louis, 4.05c. New York.

The foreign market is slightly higher, good ordinaries being quoted at £17 7s. 6d.; specials at £17 12s. 6d.

Antimony is without change. We quote Cookson's at 10@10¼c.; Hallett's at 8¾c.; Hungarian, Italian, Japanese and U. S. Star at 8⅝c.

Nickel.—The price continues firm at 50@60c. per lb., according to size and terms of orders.

Another cargo of nickel ore from New Caledonia, amounting to 8,954 tons, was imported by the Orford Copper Company at New York this week.

Platinum.—Consumption continues good and prices have risen recently. Ingot platinum in large lots now commands $20.50 per ounce in New York. In London prices are about on a parity with the New York rate.

Chemical ware (crucibles and dishes), best hammered metal from store in large quantities, is worth 80c. per gram.

Quicksilver.—While the nominal quotation is still $51 in New York, the metal can be had for $48.75@$50 per flask in large quantities, with a slightly higher rate named for small orders. San Francisco prices are the same as last week, $46.50@$47 per flask being named for domestic orders and $42@$43.50 for export. The London price continues nominally £9 2s. 6d. per flask.

Minor Metals and Alloys.—Wholesale prices, f. o. b. works, are as follows:

Aluminum.	Per lb.		Per lb
No. 1, 99% ingots	33@37c.	Ferro-Titanium (25%)	$1.00
No. 2, 90% ingots	31@34c.	Ferro tungsten (37%)	32c.
Rolled sheets	42c. up	Magnesium	$2.75@$3
Alum.-bronze	20@23c.	Manganese (over 99%)	$1.00
Nickel-alum	33@39c.	Mangan'e Cop (20% Mn)	32c.
Bismuth	$2.05	Mangan's Cop (30% Mn)	38c.
Chromium (over 99%)	1.00	Molybdenum (Best)	$1.75
Copper red oxide	50c.	Phosphorus	50c.
Ferro-Molyb'um (50%)	$1.25	American	70c.
Ferro-Titanium (10%)	90c.	Tungsten (Best)	69c.

Variations in prices depend chiefly on the size of the order.

LATE NEWS

In Jersey City, May 16th, Vice-Chancellor Pitney set aside the petition of C. O. Geer for an injunction restraining the Amalgamated Copper Company from absorbing the Boston & Montana and the Butte & Boston. Vice-Chancellor Pitney gave as his reason that the injunction at this time would be premature, as the Amalgamated directors had done nothing as yet detrimental to the stockholders' interests and promised not to act without the stockholders' consent.

The prospectus of the Allis-Chalmers Company has been issued by Vermilye & Company, of New York, underwriting managers. The valuation of the several plants included in the consolidation is placed by Julian Kennedy, the expert who examined the properties, at $9,935,000. The total present value of tangible property is stated at $19,935,000, while the total issue of preferred stock against this property is $16,250,000. The companies taken over include the following builders of heavy engines, mining and other machinery: The Edward P. Allis Company, of Milwaukee, Wis.; Fraser & Chalmers (incorporated), of Chicago, Ill.; the Gates Iron Works, of Chicago, Ill., and the Dickson Manufacturing Company, of Scranton, Pa. (exclusive of locomotive works). The plants are all running at full capacity. The expert found that the great bulk of the tools in all of them were comparatively new, having been put in within the last 7 or 8 years. It is stated that the Allis, Fraser & Chalmers and Gates Iron Works plants have been operated night and day during the past 2 years and have, from lack of capacity, declined in that period as much business as they have been able to accept. The company's net profits for the fiscal year to end of May 1st, 1902, are estimated as sufficient to pay dividends at the rate of 7% on the authorized preferred stock and about 4% on the common stock. If allowance is made from the economies expected from consolidation it is estimated that the company should earn 7% on both classes of stock. The increased business expected to follow the completion of the additional Allis works, now in course of construction, will, it is estimated, bring the profits up equivalent to 8% on the preferred stock and 10% on the common stock. The issue of preferred stock is $16,250,000, bearing 7% cumulative dividends, and it is convertible into common stock, share for share, at the option of the holder, upon any first day of May until and including May 1st, 1921. It also has a further preference of 1% non-cumulative, after the payment of 7% upon the common stock. The issued amount of common stock is $20,000,000.

The officers of the company are Wm. W. Allis, chairman of the board; Charles Allis, president; W. J. Chalmers, chairman of executive committee and treasurer; William A. Read, chairman of finance committee; Max Pam, general counsel, and Edwin Reynolds, chief engineer. The board of directors is composed as follows: Edward D. Adams, Elbert H. Gary, William A. Read, James Stillman and Cornelius Vanderbilt, of New York; William L. Elkins, Jr., of Philadelphia; Henry W. Hoyt, W. J. Chalmers, James H. Eckels and Max Pam, of Chicago, and Charles Allis, William W. Allis, Frank G. Bigelow and Edwin Reynolds, of Milwaukee.

SLATE TRADE REVIEW.

New York. May 17.

The list of prices per square for No. 1 slate standard brand f. o. b. at quarries in car-load lots, is given below:

Size, inches	Monson or Br'nville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Chap'n Key's'ne	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	Red
	$	$	$	$	$	$	$	$	$
24 x 14	6.50	3.50	3.00	3.00	....	5.10	3.00	....	.....
24 x 12	6.60	3.50	3.00	3.00	3.80	5.25	3.00	3.75	.....
22 x 12	6.60	3.50	3.25	3.00	....	5.25	3.00	3.75	.....
22 x 11	6.50	3.75	3.25	3.00	4.00	5.25	3.00	4.00	.....
20 x 12	6 90	3.75	.....	3 00	.. .	5.25	3.00	3.75	.....
20 x 11	6.80	.....	.....	3.25	....	5.25	3.00	....	.....
20 x 10	6.80	4.25	3.50	3.25	4.00	5.35	3.00	4.25	10.50
18 x 12	6.80	3.75	.....	3.00	.....	5.25	3.00	3.50	.....
18 x 11	7.00	.....	.....	.....	.....	.....	3.00	3.75	.....
18 x 10	7.00	4.25	3.50	3.25	4.00	5.35	3.00	4.00	10.50
18 x 9	7.00	4.50	3.50	3.25	4.00	5.35	3.00	4.25	10.50
16 x 12	6.80	3.75	.....	3.00	.....	.....	2.90	3.50	....
16 x 10	7.00	4.00	3.50	3.25	4.00	5 25	2.90	4.00	10.50
16 x 9	7.00	4.25	.....	3.25	4.00	5.35	2.90	4.25	10.50
16 x 8	7.00	4.50	3.50	3.25	4.25	5.35	2.90	4.25	10.50
14 x 10	6 60	3.75	3.25	3.00	.....	5 25	2.70	3.75	10.50
14 x 9	6.50	.....	.....	.....	.....	....	2.70	3.75	10.50
14 x 8	6 60	3.75	3.25	3.00	4.00	5.10	2.70	4.25	10.50
14 x 7	6.40	3.75	3.25	3.00	3.75	5.10	2.50	4.25	10.50
12 x 10	5.75	....	... .	....	... .	...	2.50	3.25	.....
12 x 9	5.60	.....	.....	....	....	....	2.50	3.25	.....
12 x 8	5.50	3.50	.....	2.85	.....	4.85	2.50	3.50	9.00
12 x 7	5.00	3.25	.....	2.85	3 25	4.85	2.00	3.50	9.00
12 x 6	4.80	3.25	.....	2.85	3.25	4.75	2.00	3.50	8.50

A square of slate is 100 sq. ft. as laid on the roof.

The market has taken on more life now that fine weather has set in, and it is possible to lay roofs. Dealers look for a good season's business at fair prices. It is said the decreased British consumption will affect our exports, and cause an accumulation of roofing slate at those quarries that were operated to satisfy the foreign demand.

Newer slate deposits are again attracting attention. At Mena, Ark., quarries are soon to be opened. It is gratifying to see quarrymen introducing electricity for operating their properties. Not only is electric haulage used, but some of the more modern slate-making plants are lit up by electricity.

An interesting exportation is that of slate machinery to Berlin, Germany. Though the quantity is not large, yet it is a beginning. It may also be noted here that suggestions have been frequently made to Welsh quarrymen by their own people to visit the American slate quarries and learn the methods which allow us to sell so cheaply in foreign markets.

At present ocean freight rates are not excessive, and a few orders have been booked, but exporters are not anxious to contract for vessel room for any length of time ahead until they know a little more of the prospective demand abroad.

MINING STOCKS.

Complete quotations will be found on page 638, 639 and 640 of mining stocks listed and dealt in at:

Boston.	Salt Lake.	Montreal.
Colo. Springs.	San Francisco.	London.
Denver.	Spokane.	Mexico.
New York.	St. Louis.	Paris.
Philadelphia.	Toronto.	

New York. May 17.

With the big speculation in railroad and industrial stocks on a decline, mining shares promise more business.

In the copper list Amalgamated on profit-taking receded from $122 to $101½, but recovered later to $111½. Anaconda lost 5 points at $43, but is again higher at $44⅞. Tennessee on curb holds its own, selling at $20½@$22, and is strengthening as a result of increased work on the property. British Columbia was uninteresting. Union continues to be dealt in by small speculators, who report sales at $6½@$5⅝.

Ontario, of Utah, reflects the lower silver market, by selling down to $8.

Quicksilver common, of California, did a good business at $4¼@$3½, but the preferred shares are featureless.

Cripple Creek, Colo., gold stocks are assuming more interest. Portland advanced 10 points to $3, Anaconda is up to 40c., while Isabella brought 65c. and promises to go higher owing to the improved Western market for the stock. Breece, of Leadville, sold at $1.85.

Comstocks are easier. Consolidated California & Virginia lost 5c. at $2.25, while Ophir brought 87c.

Ten shares of the Lackawanna Iron and Steel Company sold at auction at $100 per share.

Boston. May 15.

(From Our Special Correspondent.)

The Wall Street semi-panic of last week, reflected in our market here, settled the boom effectually for the present. There was a general break in the coppers as well as in the other stocks, and a weak market, gradually recovering to-day. If reports are to be believed, there has been a good buying of coppers by insiders who see the chance to enlarge their holdings at more moderate prices than have been possible for some time past. At least that is the talk on the Street; but, nevertheless, every fractional recovery in quotations brings out plenty of selling orders. Unmistakably weak the market is at present, and the talk suits it. A few days ago we heard nothing but the benefits of consolidation, the future of the copper stocks, Amalgamated going to $300, and all the rest. To-day we hear of annoying litigation, the possibility of more trouble, lower dividends and all that side of the story. The men who were holding on for a bigger rise a week ago are now the gloomiest in their predictions.

Some hopeful souls say that the breakdown in the big railroad and industrial stocks will help the coppers, since the long rise in the other stocks diverted attention from mining shares. It may be; but the market is in a condition where it is not wise to predict much of the future.

The situation is not altogether new; it is a parallel case to many in previous years. We have been on a spree and are now suffering from "next morning's head." In the course of the flurry, however, a good many were badly damaged and others so loaded up with high-priced stocks that they will be out of the market for a long time. Of course, the good stocks suffer with the bad ones.

Prices have been low in comparison with recent weeks, but they are still on a pretty high level, and after all there is not much reason to complain. If we have a period of comparative quiet it will hurt no one but the brokers and professional dealers.

The litigation over the Boston & Montana and Butte & Boston sale shows nothing new. The general impression here is that it will be settled and the sale go through. As to the policy of the transaction, so far as the stockholders of the two companies are concerned, opinions differ, but the majority are inclined to favor the deal.

A much more serious matter is the Butte situation, which does not seem to improve. The legal tangle grows worse and worse, apparently, with no possible settlement in sight.

This letter has dealt with philosophy rather than facts, and perhaps the latter can best be told by the daily quotations. To wind up in the same vein I have only to repeat what I have noted heretofore. The Boston copper market is radically changed, and will never return to its former condition. The smaller speculator no longer has a fair chance, since the market is now completely under the control of those influences which have done so much harm elsewhere. It is a great pity, but it is no use trying to conceal facts.

Colorado Springs. May 12.

(From Our Special Correspondent.)

As a general thing the market was much the same this week as it has been for some time past—prices weak and light sales. At different times during the week one or two of the stocks showed some strength and made good advances. The break in the New York market did not seem to affect this one to any extent either one way or the other, though it is being predicted by some of the brokers that it will have the effect of turning the attention of investors toward the mining stocks. Several more stocks were transferred this week from the unclassified list to their permanent place. A number of stocks were also thrown off the Exchange altogether on account of non-compliance with the requirements of the listing committee under the new rules. Elkton sold as high as $1.77 during the week, though it fell off a little at the end. The fact that the water had been gotten under control probably helped it. Argentum-Juniata sold as high as 21 during the first of the week, but fell off again as low as 16. Doctor-Jack Pot remained about the same. Pharmacist dropped a little, then gained, but afterward fell off again. On the whole the good condition of the district is not reflected in the stock market. The total sales were 2,070,118 shares of the total value of $337,136. This is a slight decrease in the number of shares sold last week, but a considerable increase in the value.

San Francisco. May 11.

(From Our Special Correspondent.)

There has been nothing new since Consolidated California & Virginia declared its dividend and gave the stock the lift which it is now gradually losing. Stocks have not been weak, however, and for two days there was a good deal of trading done.

Some quotations noted are: Consolidated California & Virginia, $2.30@$2.35; Ophir, 85c.; Caledonia, 60c.; Silver Hill, 35c.; Mexican, 19c.; Hale & Norcross, 19c.; Yellow Jacket, 18c.; Gould & Curry, 12@13c.

On the Producers' Oil Exchange business showed a falling off, and there were comparatively light dealings. Home sold for $3.20; Twenty-eight, $1.15; California Standard, 33@34c.; Oil City, 27c. The heaviest buying was in California Standard.

On the San Francisco Oil Exchange business was quiet, and was confined mainly to the lower priced stocks. Hanford was quoted at $94; San Joaquin, $9; Independence, 15c.; Petroleum Center, 7@8c. The last-named stock showed the largest dealings.

London. May 7.

(From Our Special Correspondent.)

The West African section continues to absorb the attention of the mining market, and this week we have had four companies introduced to the public. These are respectively the Wassau Consolidated Goldfields, Limited, capital £300,000; the Buatuim Wassau Gold Mine, Limited, capital £150,000; the Jappa Gold Mines, Limited, capital £100,000, and the Guinea Coast Exploration Syndicate, Limited, capital £20,000. The first two of these companies give considerable details in their prospectuses relating to West Africa in general and the particular tracts they are interested in, but none of them is more than a prospect so far. The third gives no particulars, while the fourth is merely a parent company to float a property already acquired. None of these companies is of great interest to anybody except their promoters.

A company of considerable interest has this week been introduced in England, viz., the Ecuadorian Association, Limited. It is well supported in London, Scotland and New York, and a considerable portion of the capital has been subscribed in America, it is said. The manager of the association is Mr. Archer Harman, of New York, and the mining business is looked after by another American, Mr. A. A. Blow, who used to be manager of the Sheba Mine in the Transvaal. The family of Coats—the cotton spinners of Glasgow—are largely interested in the capital. The first object of the association is to build a line of railway from Guayaquil to Quito. The mineral rights acquired are very extensive and appear to be valuable. The company is not exactly a new one, for £400,000 out of a capital of £500,000 has already been subscribed, and the present issue offered to the public is £50,000. It is expected that an issue of debenture bonds will be made shortly on the security of the railroad, and then further capital will be available for commercial enterprises of all sorts.

Last week I recorded the failure of the Smelting Corporation, brought on through the mismanagement and misdirection of Mr. H. E. Fry. Since then the directors and shareholders have discussed the future of the corporation and its works, and I cannot congratulate the directors on the scheme put forward. It appears that Mr. John Peters, a city man who has had considerable experience in forming and reconstructing copper mining companies, has approached the directors with a view of showing them how to turn the works into a copper smelting plant. Mr. Peters is director or secretary of nine other companies at the present time, including the Central Chili Copper Company (a reconstruction of the old Panulcillo) and the unfortunate Copper Corporation of Chili, and of the Newfoundland Copper Company. While nothing can be said against Mr. Peters personally, one would have thought that the solving of the Smelting Corporation required more heroic measures than appointing Mr. Peters liquidator. However, we must hope for the best.

The British Columbia Electric Railway Company, Limited, is offering another block of preference shares for subscription in London. This company is a well-known one, being run by Messrs. Horne-Payne & Mitchell-Innes, and capital to the amount of £750,000 in shares and £250,000 in debenture bonds has been issued. The present issue is £64,000 in preference shares, and it is required for new power and lighting plants. As the company has been a regular dividend payer, no doubt the issue will be all subscribed.

Some interest was caused in West Australians this week by the meetings of the Ivanhoe and Horseshoe companies, when the directors indulged in glowing prophesies, but the effect was not so great as might have been expected in more bustling times. A new West African company has been introduced to the public this week. This is the Akabo Exploration Company, Limited, which has been formed with a capital of £150,000 to acquire certain properties in Wassau and Ashanti. The promoters and directors are not prominent people and the prospectus is not of great interest.

Another company brought into prominence this week is the Ayrshire Gold Mine and Lomagunda Railway Company, Limited. This is really not a new company, but £250,000 in debenture bonds are being now offered to the public. The properties are in Rhodesia and the object of the present issue is to build and equip the railway and to provide funds for machinery at the mine. The company is under the protection of the British South Africa Company and the issue is made under influential auspices, so there will be little difficulty in raising the money.

From time to time recently I have mentioned that the mines in the Colar District of India have been issuing new capital for developments. This week a scheme has been placed before the shareholders of the Champion Reef Company for the purpose of raising £165,000 by issuing 33,000 new shares, of 10s. nominal value each, at £5 each. The money is required for supplying new and more powerful plant, new mills,

and improving shafts. This issue will only increase the nominal capital from £220,000 to £236,500, and shareholders will be glad to respond to the invitation to subscribe. The Nundydroog Company, which is also under the same management, is intending to follow the suit of the Mysore and the Champion Reef by splitting its £1 shares into two of 10s. each. The shares of this company are not at so high a premium as those of the two mentioned, as they stand at about £42. But the advantage of splitting them will still be considerable.

Paris. May 5.

(From Our Special Correspondent.)

The mining stock market has shown somewhat more activity and interest. The prices in most cases were rather heavy.

The metallurgical shares generally remained unchanged. This is rather on account of lack of dealings than because of any confident feeling. With these companies the main question at present is the fuel supply and its probable cost, and that is still very uncertain.

The coal stocks generally have been depressed by the possibility of a general strike of the miners. The holders of these shares, however, show little disposition to part with them, in view of the larger dividends received. The Societe Carmaux has just declared a dividend of 65 fr. for the past year.

The Societe des Metaux has been generally steady, and is now gaining slightly. The Societe de l'Electrometallurgie has just declared a dividend of 37.50 fr. for the past year. Probably it would have been better policy to pay 30 fr. only and devote the rest to increasing the reserve, which is small.

Malfidano has recovered a little from its lowest point. It appears that there are many stockholders who have faith in the future of the company. Under the best management, however, it may take several years to restore its position fully. The other zinc and lead stocks are generally quiet and rather depressed.

The Russian group of coal and metallurgical stocks have been generally quiet and rather weak.

A new stock which is now dealt in here is that of the Harpener Coal Company, a German concern. It is a large corporation and its shares are selling here at 1,375 fr., a premium of about 80% over their par value. A German coal stock is something new on our Bourse.

The Transvaal gold stocks are stronger and more active, though one fails to comprehend the reason fully. Certainly there is nothing to indicate an end of the dragging guerilla war, which is effectually preventing a renewal of work in the mines.

The copper shares are still very strong. With regard to Rio Tinto, I am informed that the Amalgamated Copper Company has acquired a considerable interest in the shares, and there is little doubt that agreements will be made, under which the European Company and the Amalgamated will work in harmony. The fluctuations in the price of the metal in London and Paris are of very small account now, when the price is fixed in New York.

You have doubtless noted the great accumulation of gold in the Bank of France. The direction has apparently decided that it is too large, for a new rule has been made that in all payments at least 20% must be in gold coin. The customers of the bank, for the most part, do not like this, preferring notes. The bank, however, insists upon the rule, and has paid out a considerable amount of coin.

The talk of union against the competition of American manufacturers continues to be heard; it is even proposed to hold a congress or conference to consider the question. Azote.

ANNUAL MEETINGS.

Name of Co.	Locat'n.	Date.	Place of Meeting.
Am. Z'c L'd Sm.	Mo.....	May 20	Portland, Me.
Bazouk Con.....	Utah....	May 28	Salt Lake City, Utah.
Buffalo Hump...	Idaho...	May 22	45 Cedar St., N. Y.
Empire Sta. Ida.	Idaho..	May 22	45 Cedar St , N. Y
Goleta ...	Cal.. ..	May 18	San Francisco, Cal.
*Oxford Beta...	Cal	June 4	San Francisco, Cal.
Parrot	Mont....	June 4	Butte, Mont.
*Yankee, Con...	Utah	May 25	Salt Lake City, Utah.

* Special meeting.

DIVIDENDS.

NAME OF COMPANY	Latest Dividend. Date.	Per share.	Total.	Total to date.
†Beth'ehem Steel..	June 1	$0.50	$150,000	$1,200,000
†Boston G. & C , Colo.	May 31	.02½	25,000	100,000
†Boston & Mont	May 29	5.00	750,000	23,975,000
Boston & Mont .extra	May 20	5.00	750,000	.....
*Central Lead. Mo....	May 15	.50	5,000	232,000
*Doctor-Jack Pot	May 28	.01	29,000	145,000
*Four Oil, Cal.....	May 15	.01	3,000	12,000
*Homestake.....	May 25	.25	52,500	9,928,750
Homestake, extra.....	May 25	.25	52,500	...
*Home, Colo.....	May 1	.25	12,500	150,000
*Ingham Con., Colo...	May 28	.00¼	3,399	20,394
§Lehigh Coal & Nav..	May 27	1.50	430,399	18,947,389
*Modoc Colo	May 15	.05	5,000	230,000
*N.Y.& Hond. Rosario	May 25	.10	15,000	1,505,000
†Ohio & Ind.C. N. Gas	June 1	1.00	90,000	540,000
†Old Colony Zinc.....	May 1	.25	17,477	103,230
Pointer, Colo	June 1	.01	12,500	25,000
*Rocco-H'mst'ke, Nev.	May 10	.01½	4,500	31,500
Shelby Iron, Ala.....	May 15	5.00	50,000	300,000
*Smuggler. Colo.....	May 15	.03	30,000	1,945,000
Standard Con., Cal...	May 21	.10	17,839	3,999,780
†Standard Oil.....	June 15	12.00	12 000,000	104,625,000
U. S. Marble, Wash..	May 15	.00¼	5.000	13,750
Ymir, B. C.	May 16	.24	48,000	144,000

* Monthly. † Quarterly.

ASSESSMENTS.

NAME OF COMPANY.	Location.	No	Delinq.	Sale.	Amt.
Am. Oil & Ref	Cal..	3	Apr. 29	May 27	.05
Andes.....	Nev..	53	May 10	May 28	.05
Best & Belcher.....	Nev..	73	May 3	May 24	.15
Bogan.....	Utah	6	Apr. 26	May 21	.10
Cerulean	Cal	..	May 20	.....	.01
Challenge	Nev.	31	May 29	June 20	.05
Eureka Con. Drift .	Cal.	29	May 28	.....	.01
Grape Vine Canyon.	Cal..	4	May 8	June 3	.05
Horseshoe Bar Con...	Cal		May 23	.....	.01
Independent.....	Cal....	..	May 31	June 20	.10
Jenny Lind....	Cal....	..	May 18	.....	.05
La Suerta..	Cal....	..	May 30	.....	.02½
Lucky Bill.	Utah	32	Apr. 27	May 21	.10
Manhattan	Utah	2	May 25	June 12	.00¼
Maple	Utah	..1	May 23	May 29	001/10
Mariposa Con l & Mg.	Cal	..	May 25	.....	10.00
McKittrick Con Oil..	Cal....	..	May 20	.....	.15
Osceola Con.	Cal....	..	May 25	...	.01
Overman	Nev.	8	June 5	June 26	.10
Potosi...	Nev.	59	June 6	June 27	.10
Queen Esther Oil.. ..	Cal....	..	May 16	June 6	.10
Reward..... . .	Cal..	9	May 13	June 5	.02
R. G. W.....	Utah	9	May 28	June 12	.00½
Sacramento Con	Utah	2	May 22	June 11	.00¼
Sailor Con....	Cal..	10	June 5	June 29	.01
Savage	Nev..	103	May 6	May 24	.10
Sea Swan..	Utah	1	May 8	May 28	.00½
Sharp..... ...	Utah	3	June 8	July 1	.00¼
Shower Con..... .	Utah	3	Apr. 30	May 31	.02
Sierra Nevada	Nev.	122	June 1	June 29	.15
Silver Bow..... ..	Utah	...	May 30	June 20	.00½
Skylark Copper.....	Utah	2	May 25	June 10	.00½
South Sliger	Cal..	1	May 6	May 27	.02
Snowflake	Utah	...	June 1	.....	.05
Union Con.	Nev.	61	May 8	May 27	.15
Utah Con.....	Nev..	36	May 15	June 5	.05
Victor . . .	Utah	...	May 29	June 19	.02
West Morning Glory.	Utah	7	May 25	June 11	.00½
Yellow Jacket.....	Nev..	7	May 7	June 12	.10
.....	...	...	.....	.....	.....
.....	...	...	.....	.....	.....
.....	...	...	.....	.....	.....

STOCK QUOTATIONS.

NEW YORK.

NAME OF COMPANY.	Location.	Par val.	May 10. H.	May 10. L.	May 11 H.	May 11 L.	May 13. H.	May 13. L.	May 14. H.	May 14. L.	May 15. H.	May 15. L.	May 16. H.	May 16. L.	Sales
Alamo	Colo..	1	.....	.....	.....	.....	15	.....	.....	.....	.....	.....	.....	.....	1,000
Amalgamated c.	Mont.	100	117⅝	108	.....	.....	122	116¾	118	110⅜	111⅛	101⅝	114⅛	.....	236880
Anaconda, c....	Mont..	25	46.88	42.00	.....	.....	48.00	45.00	46.50	48.50	44.88	43.00	47.00	.....	26,000
Anaconda Gold..	Colo..	5	.....	.....	.....	.....	.....	.....	.40	.....	.....	.....	.....	.....	100
Argentum-Jun..	Colo..	2	.....	.....	.....	.....	.19	.....	.19	.....	.20	.19	.....	.....	2,200
Best & Belcher..	Nev ..	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Breece.....	Colo..	25	1.80	.....	.....	.....	1.85	.....	.....	.....	.....	.....	.....	.....	200
British Col. Cop.	B. C ..	5	17.00	.....	.....	.....	18.00	17.50	18.00	17.50	18.00	17.50	18.00	17.25	.....
Brunswick Cons.	Cal. ..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chrysolite.....	Colo..	50	.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Comstock T.....	Nev ..	100	.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300
Con. Cal. & Va..	Colo..	2½	.....	.....	.....	.....	.....	.....	2.30	.....	2.25	.....	.....	.....	450
Crescent.....	Colo..	1	.....	.....	.....	.....	.....	.....	.12	.....	.....	.....	.....	.....	200
Cripple Cr. Con .	Colo ..	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Elkton Con.....	Colo..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gould & Curry...	Nev ..	3	.....	.....	.....	.....	.....	.....	.....	.....	.12	.....	.....	.....	500
Hale & Norcross.	Nev ..	3	.....	.....	.....	.....	.....	.....	.....	.....	.25	.....	.....	.....	100
Hart.....	Colo..	1	.....	.....	.....	.....	.18	.....	.....	.....	.....	.....	.....	.....	100
Homestake.....	S. Dak	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Horn Silver.	Utah..	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Isabella.....	Colo..	1	.63	.....	.....	.....	.....	.....	.....	.....	.65	.....	.....	.....	600
Leadville	Colo..	10	.....	.....	.....	.....	.06	.....	.....	.....	.....	.....	.....	.....	500
Little Chief.....	Colo..	1	.....	.....	.....	.....	.13	.....	.....	.....	.....	.....	.....	.....	9 400
Mexican.....	Nev ..	3	.....	.....	.....	.....	.....	.....	.....	.....	.20	.....	.....	.....	200
Mollie Gibson...	Colo..	5	.25	.....	.....	.....	.26	.....	.26	.....	.....	.....	.....	.....	1,500
Mt. Rosa.....	Colo..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ontario.....	Utah..	100	2.00	.....	.....	.....	5.00	.....	.....	.....	.....	.....	.....	.....	150
Ophir.....	Nev ..	3	.....	.....	.....	.....	.....	.....	.87	.....	.....	.....	.....	.....	.....
Pharmacist	Colo..	1	.02	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Phoenix.....	Ariz..	1	.....	.....	.....	.....	.14	.13	.....	.....	.....	.....	.....	.....	2,000
Plymouth.....	Cal....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland.....	Colo..	1	.....	.....	.....	.....	2.90	.....	3.00	.....	.....	.....	.....	.....	200
Quicksilver.....	Cal....	100	4.00	3.38	.....	.....	4.25	4.00	3.75	3.50	3.75	3.00	3.75	.....	8,580
Quicksilver, pf..	Cal....	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sierra Nevada...	Nev ..	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard Con ...	Cal....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Syndicate.....	Cal....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tenn. Copper....	Tenn..	25	22.00	18.50	.....	.....	22.00	18.50	21.50	20.50	21.00	19.50	21.50	20.50	502
Union Copper...	N. C...	10	6.25	6.00	.....	.....	6.25	6.00	6.13	6.00	6.25	6.00	6.50	6.00	3,000

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref.		$100	56	53	.....	.....	59	56⅜	60	54	56	50⅜	55⅛	.....	23,500
" " " pf		100	96⅜	92	.....	.....	97½	95	97½	95⅛	96	95	95⅝	.....	5,510
Am.S. & W. Con		100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" " " pf'r n		100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Col. Fuel & I..	Colo..	100	91	89	.....	.....	96⅜	94	92¾	89¾	90⅜	87½	92	.....	5,640
Col. & H. C.& I.	"	100	.....	.....	.....	.....	18	15	18¾	18	.17¾	15	17¼	.....	2,300
Empire S., Ida.	Idaho	10	9	.....	.....	.....	9	.....	9	.....	9	.....	.....	.....	.....
Federal Steel..		100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fleming'n C.&C	W.Va	100	8	4	.....	.....	8	4	8	4	8	4	8	6	.....
*Mong. R. Coal.	Pa....	100	13⅝	13¼	.....	.....	13¾	13⅜	13¼	13⅛	.....	.....	.....	.....	5,570
" " " pf	"	100	48	47¼	.....	.....	47½	.....	48	47	.....	.....	.....	.....	250
National Lead..		100	16	15¾	.....	.....	16⅜	16⅛	16⅝	16¼	.....	.....	17⅛	.....	1,200
" " pf		100	.....	.....	.....	.....	83½	82	82	.....	.....	.....	82	.....	600
National Salt...		109	44	43½	.....	.....	46	44	44	43¾	43½	43	44	.....	2,700
" " " pf		100	75¾	.....	.....	.....	78	77¼	77¾	77¼	76¾	76	.....	.....	1,120
*Pittsburg Coal.	Pa....	100	32¼	32½	.....	.....	33	32⅝	32¾	32½	.....	.....	.....	.....	5.363
" " " pf	"	100	96	95½	.....	.....	96	95⅞	95⅞	95⅜	.....	.....	.....	.....	2 107
Republic I. & S.		100	19	16½	.....	.....	19	18	18⅜	17	17½	17	17⅜	.....	10,400
" " pf		100	76	70½	.....	.....	73¾	73	73	72	71½	70¾	72⅜	.....	4,000
Sloss-Shef		100	37	.....	.....	.....	37½	.....	36½	36	.35	.....	.....	.....	900
" " pf....		100	.....	.....	.....	.....	84	.....	.....	.....	.33	80⅛	81¾	.....	575
Stan. Oil.....		100	805	800	.....	.....	813	810	812	808	795	790	800	796	70
Tenn. C. I.&R.R		100	58	53	.....	.....	59	56½	56⅞	51¼	53¾	50	54¼	.....	19,650
Va. Coal & C....	Va....	100	8⅛	7¼	.....	.....	8	6	9	6	9	8¼	.....	.....	.....

* On Pittsburg, Pa., Exchange. Total sales, 387 255

SAN FRANCISCO, CAL.

NAME OF COMPANY.	Location.	Par value.	May 9.	May 10.	May 11.	May 13.	May 14.	May 15.
Belcher.....	Nev.	$3.00	.10	.10	.11	.10	.10	.08
Best & Belcher.....	"	3.00	.23	.23	.24	.22	.22	.25
Caledonia.....	"	3.00	.61	.60	.60	.59	.55	.47
Challenge Con.....	"	3.00	.10	.10	.10	.10	.10	.10
Chollar.....	"	3.00	.05	.05	.06	.06	.05	.05
Confidence.....	"	3.00	.55	.56	.55	.55	.55	.55
Con. California & Virginia....	"	2.50	2.25	2.25	2.25	2.05	2.05	2.15
Crown Point.....	"	3.00	.14	.13	.13	.13	.12	.11
Gould & Curry.....	"	3.00	.13	.12	.18	.12	.11	.11
Hale & Norcross.....	"	3.00	.19	.18	.18	.22	.21	.20
Justice.....	"	2.00	.06	.06	.04	.04	.05	.04
Mexican.....	"	3.00	.17	.18	.19	.18	.17	.18
Occidental Con.....	"	3.00	.03	.03	.08	.03	.03	.03
Ophir.....	"	3.00	.83	.86	.87	.84	.88	.88
Potosi.....	"	3.00	.04	04	.04	.04	.03	.03
Savage.....	"	2.50	.12	.12	.12	.13	.12	.12
Sierra Nevada.....	"	3.00	.17	.16	.15	.13	.13	.15
Standard Con.....	Cal.	10.00	4.00	4.00	4.20	4.50	4.00	4.00
Union Con.....	Nev.	2.50	.19	.19	.19	.18	.17	.19
Utah Con.....	"	1.00	.01	.01	.06	.06	.06	.03
Yellow Jacket.....	"	3.00	.17	.17	.17	.16	.16	.17

CALIFORNIA OIL STOCKS.*

Name of Company.	No. of shares.	Par Val.	Apr. 27. H.	Apr. 27. L.	Apr. 29. H.	Apr. 29. L.	Apr. 30. H.	Apr. 30. L.	May 1. H.	May 1. L.	May 2. H.	May 2. L.	May 3. H.	May 3. L.	Sales
Blue Goose...	5,000	$100	.....	.....	.....	.....	.....	.....	.....	.....	2.00	.....	2.00	1.50	.....
Buckhorn.....	20,000	10.00	2.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cal. Standard.	500,000	1.00	.38	.....	.39	.37	.40	.38	.39	.38	.39	.37	.39	.37	6,000
Caribou.....	100,000	1.00	.70	.....	.70	.30	.70	.....	.70	.67	.66	.65	.66	.65	.....
El Dorado.....	100,000	1.00	1.45	1.40	1.50	.....	1.45	1.25	1.40	.....	1.40	.....	1.40	.....	.....
Four.....	300,000	1.00	.50	.49	.50	.49	50	.48	50	.48	.50	.48	50	.48	1,000
Hanford.....	2,000	10.00	10000	98.00	10000	98.00	10000	98.00	10000	98.00	10000	97.00	98.00	97.00	40
Hanf'd F. & K.	150,000	1.00	.16	.....	.16	.15	.15	.....	.15	.....	.....	.....	.16	.15	100
Home.....	100,000	1.00	3.40	3.30	3.45	3.40	3.50	3.25	3.50	3.30	3.35	3.25	3.35	3.30	2,200
Homestake....	10,000	10.00	8.00	.....	8.00	.....	8.00	.....	10.00	.....	8.00	.....	9.00	.....	.....
Independence.	600,000	1.00	.19	.18	.18	.17	.19	.17	.19	.17	.18	.17	.18	.17	600
Kern.....	100,000	1.00	7.00	6.88	7.00	6.75	6.88	6.50	7.00	6.50	6.88	6.50	6.75	6.25	365
Kern River...	20,000	5.00	.....	.....	13.50	.....	13.00	12.50	13.00	.....	13.00	.....	13.00	.....	.....
McKittrick....	60,000	1.00	.40	.25	.40	.....	.35	.....	.40	.....	.40	.....	.32	.25	.....
Mo'arch of Ari	500,000	1.00	.54	.....	.56	.55	.56	.53	.52	.50	.50	.48	.50	.46	4,350
Monte Cristo..	500,000	1.00	2.40	.....	2.45	.....	2.40	.....	2.45	2.40	2.45	2.30	2.40	2.30	1,040
Oil City Petrol	5,000	100.	.27	.26	.28	.26	.28	.26	.28	.26	.28	.27	.28	.26	1,000
Petrol. Center.	500,000	1.00	.15	.14	.15	.14	.15	.13	.15	.13	.14	.12	.13	.07	15,500
Queen Esther.	100,000	1.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San Joaquin..	100,000	1.00	10.00	9.25	10.00	9.25	10.00	9.00	10.00	9.00	10.00	8.50	10.00	9.38	.....
Sterling.....	250,000	1.00	2.05	2.00	2.03	197½	2.00	1.90	2.00	1.90	2.00	1.95	2.00	1.95	550
Sunset (Orig.)	100,000	5.00	.....	.....	.30	.....	.30	.....	.30	.....	.30	.....	.30	.....	.....
Twenty-eight..	60,000	10.00	1.40	1.35	1.40	1.35	1.40	1.35	1.40	1.30	1.35	1.35	1.35	1.25	150
Yukon.....	100,000	2.50	.35	.....	.35	.....	.25	.....	.....	.....	.....	.....	.....	.....	.....

* Producers' Oil Exchange, San Francisco. Total sales, 33,395 shares.

ST. LOUIS, MO.*

NAME.	Location.	Share capital.	Par val.	Apr. 30. Bid.	Apr. 30. Ask.	NAME.	Location.	Share capital.	Par val.	May 14. Bid.	May 14. Ask.
Am.-Nettie	Colo..	300,000	$10	$0.90	$1.00	Granite Bimetallic	Mt.	1000,000	$10	$2.10	$2.25
Catherine Lead.	Mo ..	50,000	10	5.50	6.00	Kan. & Tex. Coal..	Mo	25,000	100	48.00	51.50
Central Lead. ..	Mo ..	10,000	100	130.00	135.00	Renault Lead.....	Mo	30,000	10	11.00	12.00
Columbia Lead.	Mo ..	50,000	10	12.25	14.00	St. Joe Lead.....	Mo	300.000	10	14.00	15.00
Con. Coal.....	Ill. ..	50.0.0	100	14.00	15.00	.....	.....	.....	.....	.....	.....
Doe Run Lead..	Mo ..	10,000	100	130.00	135.00	.....	.....	.....	.....	.....	.....

* From our special correspondent.

STOCK QUOTATIONS.

BOSTON, MASS.†

NAME OF COMPANY.	Par val.	Shares issued.	May 9. H.	May 9. L.	May 10. H.	May 10. L.	May 11. H.	May 11. L.	May 13. H.	May 13. L.	May 14. H.	May 14. L.	May 15. H.	May 15. L.	Sales
Adventure Con..	$25	100,000	15.50	13.75	15.25	15.75	.....	.....	16.00	15.75	16.38	15.75	16.00	14.50	3,934
Aetna.....	5	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.75	.....	.....	.....	1,000
Allouez.....	25	80,000	3.00	.....	3.00	.....	.....	.....	3.25	3.00	3.00	.....	3.00	.....	340
Amal. Copper....	100	750,000	117	90.00	116¾	107	.....	.....	121	116¾	118	111	113	103	41,341
Am. Z. L. & Sm..	25	60,000	14.00	.....	14.00	13.50	.....	.....	13.75	.....	13.00	.....	13.00	12.75	560
Anaconda.....	25	1200,000	48.00	39.00	46.88	48.00	.....	.....	48.50	47.50	47.00	.....	.....	.....	1,812
Arcadian, c.....	25	150,000	17.00	15.00	17.00	15.50	.....	.....	17.50	17.00	18.00	17.00	17.00	16.25	2,405
Arnold.....	25	60,000	3.25	.....	.....	.....	.....	.....	3.50	.....	.....	.....	3.00	2.50	600
Atlantic, c.....	25	40,000	32.00	31.00	31.00	30.00	.....	.....	32.00	.....	32.00	30.00	30.00	29.00	1,750
Baltic, c.....	25	100,000	42.00	35.00	42.00	40.00	.....	.....	45.00	43.50	44.00	.....	42.50	41.00	5,435
Bingham, c. g....	10	190,000	24.00	22.50	23.50	20.00	.....	.....	23.50	22.75	23.25	23.00	23.00	22.50	5,476
Bonanza Dev....	10	300,000	.....	.....	1.25	.....	.....	.....	1.25	1.13	.....	.....	.....	.....	1,700
Boston, g.....	10	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston & Mont..	25	150,000	400	390	425	400	.....	.....	425	422	420	.....	410.	395	769
British Columbia	5	300,000	.....	.....	18.50	.....	.....	.....	.....	.....	.....	.....	18.50	.....	160
Butte & Bost., c.	10	200,000	107	92.00	103¾	95.00	.....	.....	114	107	108	103	104½	99.00	10,361
Cal. & Hecla, c..	25	100,000	825	820	825	820	.....	.....	825	.....	825	.....	825	822	90
Catalpa.....	10	300 000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Centennial, c....	25	90,000	28.50	23.50	28.00	26.00	.....	.....	30.00	28.13	29.13	28.00	27 25	26.00	10,970
Cent'l-Eureka....	25	100,000	30.50	30.00	30.00	28.00	.....	.....	31.50	29.75	30.50	30.00	30.00	29.00	3,055
Central Oil	25	60,050	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cochiti, g.....	10	175,000	7.25	6.50	7.00	6.25	.....	.....	7.00	6.50	7.00	6.50	6.50	5.25	4,469
Cons. Mercur, g.	5	1000,000	.....	.....	3.88	3.00	.....	.....	3.50	3.38	3.50	3.25	3.38	3.25	5,300
Copper Range ..	25	100,000	51.00	45.00	51.00	46.00	.....	.....	54.50	51.00	54.00	50.50	50.00	47.00	9,580
Daly-West	20	150,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36.50	.....	100
Dominion Coal..	100	150,000	35.75	34.00	36.00	34.00	.....	.....	35.50	35.00	34.88	32.00	34.50	32.00	5,926
do, pref.....	100	30,000	.....	.....	114½	.....	.....	.....	114½	.....	114¾	.....	.....	.....	104
Elm River.....	12	100,000	.....	.....	4.50	.....	.....	.....	4.75	.....	4.50	.....	4.00	.....	200
Franklin, c.....	25	100,000	18.00	16.00	17.50	16.00	.....	.....	18.50	18.00	18.00	.....	18.00	17.00	2,575
Humboldt.....	25	40,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
I. Royal Con., c..	25	150,000	49.00	43.00	50.00	46.00	.....	.....	54.00	51.75	52.00	49.00	49.00	45.00	10,855
Mass Con.....	25	100,000	18.00	.....	17.50	17.00	.....	.....	18.00	17.25	17.75	17.00	18.75	.....	3,885
Mayflower.....	25	100,000	2.00	.....	2.00	.....	.....	.....	.....	.....	2.00	1.88	.....	.....	130
Melones.....	10	167,577	.....	.....	.....	.....	.....	.....	2.00	.....	.....	.....	2.00	.....	600
Merced.....	15	100,000	5.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Michigan.....	25	100,000	7.00	.....	7.50	7.00	.....	.....	7.50	.....	7.50	7.25	7.00	.....	1,404
Mohawk, c	25	100,000	36.25	31.00	38.00	34.00	.....	.....	41.00	39.50	41.00	38.38	38.50	36.00	15,657
Mont. C. & C....	25	200,000	4.38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
National	25	100,000	1.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300
N.E. Gas & Coke	100	100,000	11.00	.....	11.25	.....	.....	.....	14.50	.....	11 50	11.00	.....	.....	1,275
Old Dominion, c	25	150,000	32.00	28.00	32.00	25.00	.....	.....	34.00	32.25	33.00	31.00	32.00	29.50	11,625
Osceola, c.....	25	93,000	86.00	80.00	85.50	.....	.....	.....	88.50	86.50	86.75	85.00	85.50	83.00	4,564
Parrot, s c.....	10	229,850	52.50	47.00	54.00	49.00	.....	.....	55.00	53.50	54.00	51.25	52.00	50.50	6,518
Phoenix Con	25	100,000	.....	.....	.....	.....	.....	.....	4.00	.....	4.00	.....	.....	.....	75
Quincy, c.....	25	100,000	172½	165	170	165	.....	.....	172	170	165	.....	165	163	741
Rhode Island....	25	100,000	5.00	.....	5.00	4.50	.....	.....	5.00	.....	4.75	4.50	4.50	4.00	1,110
Santa Fe, g. c....	10	250,000	8.00	.....	7.00	6.50	.....	.....	7.50	7.00	7.50	7.00	7.50	6.50	2,050
San Ysabel.....	5	130,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shawmut Oil	25	50,000	.....	.....	.....	.....	.....	.....	15.75	.....	.....	.....	.....	.....	100
Tamarack, c.....	25	60,000	330	.....	330	320	.....	.....	330	.....	325	.....	325	315	206
Tecumseh.....	25	50,000	1.50	.....	1.88	.....	.....	.....	.....	.....	.....	.....	.....	.....	135
Trimountain.....	25	100,000	39.00	38.00	45.00	37.00	.....	.....	43.75	43.00	43.00	42.50	43.00	42.00	7,075
Trinity	25	160,000	31.25	26.00	33.00	27.00	.....	.....	32.00	31.00	32.00	29.50	30.00	29.00	6,518
UnitedStatesMg.	25	250,000	20.00	15.50	20.00	18.38	.....	.....	21.75	20.50	20.88	19.50	19.50	18.00	15,718
U. S. Oil.....	25	100,000	14.00	13.00	18.18	12.75	.....	.....	14.00	13.50	18.50	.....	13.50	.....	2 080
Utah Con., g. c..	5	900,000	30.50	25.00	31.50	28.00	.....	.....	31.38	30.00	30.50	29.25	29.00	28.50	10,207
Victoria.....	25	100,000	.....	.....	4.00	3.75	.....	.....	5.00	4.00	4.88	4.50	4.50	.....	5,975
Winona, c.....	25	100,000	3.50	.....	4.00	.....	.....	.....	3.75	3.00	3.25	3.00	3.50	3.00	2,160
Wolverine c....	25	60,000	55.50	51.00	56.00	53.00	.....	.....	57.50	56.00	57.00	53.50	54.00	53.00	3,026
Wyandot.....	25	100,000	1.50	.....	1.63	1.50	.....	.....	.....	.....	1.50	.....	1.75	.....	1,050

†Official quotations Boston Stock Exchange. Total sales, 237,895 shares.

PHILADELPHIA, PA. §

NAME OF COMPANY.	L'cation.	Par Val.	May 9. H.	May 9. L.	May 10. H.	May 10. L.	May 11. H.	May 11. L.	May 13. H.	May 13. L.	May 14. H.	May 14. L.	May 15. H.	May 15. L.	Sales
Am. Alkali.....	.....	$50	1.25	.....	1.18	1.00	.....	.....	1.00	.....	1.00	.....	1.38	1.00	3,200
Am. Cement.....	.....	10	6.75	.....	6.88	.....	.....	.....	.....	.....	6.88	.....	6.88	.....	215
Bethlehem Iron.	Pa.	50	.....	.....	.....	.....	.....	.....	63.00	.....	63.00	.....	63.00	.....	232
Bethlehem Steel	"	50	22.75	19.00	24.50	22.25	.....	.....	25.50	24.00	24.50	23.50	23.	22.75	19,009
Cambria Iron..	"	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cambria Steel...	"	50	23.75	17.75	23.00	21.00	.....	.....	23.38	22.50	22.75	20.88	21.25	19.63	48,391
Susq. I. & S.....	"	10	2.25	.....	2.25	2.00	.....	.....	2.25	.....	2.25	.....	2.25	2.25	960
United Gas I.....	"	50	118½	115	118½	117	.....	.....	119¼	119	119¾	117½	118	116½	7,267

Total shares sold, 70,274. §Reported by Townsend, Whelen & Co., 309 Walnut St. Philadelphia.

SALT LAKE CITY, UTAH. May 11.

STOCKS.	Shares.	Par val.	Bid.	Asked.	STOCKS.	Shares.	Par val.	Bid.	Asked.
Ajax.....	300,000	$10	$1.15¾	$1.15⅞	Horn Silver.....	400,000	$25	$1.05	.....
Albion.....	.....	.....	.....	.....	Joe Bowers.....	400,000	1	.03¼	$0.03½
Alice.....	400,000	25	.35	.....	Lower Mammoth.	150,000	1	4.47	4.54½
Anchor.....	.....	.....	.....	2.90	Mammoth	400,000	5	2.34½	2.40
Ben Butler.....	.....	.....	.....	.09½	May Day.....	400,000	¾	.83¾	.83¾
Bullion-Beck & Ch..	100,000	10	8.35	8.90	Northern Light ..	400,000	5	.09¾	.12
Centennial Eureka.	200,000	25	28.25	31.00	Ontario.....	150,000	100	8.95	10.10
Cons. Mercur.....	1,000,000	5	3.17½	3.21	Rocco-H'st'k-Nev.	.....	.....	.76	.90
Dalton.....	500,000	5	.04	.06¼	Sacramento.....	1,000,000	5	.33½	.40
Dalton & Lark.....	2,500,000	1	.09¼	.09½	Showers Cons....	400,000	5	.10	.20
Daly.....	150,000	20	.....	2.05	Silver King.....	150,000	20	.....	35.00
Daly-West.....	150,000	20	35.20	35.50	Silver Shield.....	.....	.....	.05½	.05¾
Dexter.....	200,000	5	.....	.90	Star Consolidated	500,000	1	.53	5¼
Eagle & Blue Bell..	250,000	1	.90	.98	Sunbeam.....	250,000	1	.42	.55
Four Aces.....	250,000	1	.....	.05¼	Swansea	100,000	5	3.98	4.02
Galena.....	100,000	10	.08½	.09¾	South Swansea....	150,000	1	.66	.82
Golden Eagle.....	250,000	1	.01½	.02½	Utah.....	100,000	1	.69½	.70
Grand Central.....	250,000	1	4.82½	5.05	Valeo.....	200,000	10	.22½	.30
Homestake.....	400,000	1	.....	.07	Yankee Consol'd..	250,000	0.10	2.87	2.90

TORONTO, ONT.

NAME OF COMPANY.	Par val.	May 4. B.	May 4. A.	May 6. B.	May 6. A.	May 7. B.	May 7. A.	May 8. B.	May 8. A.	May 9. B.	May 9. A.	May 10. B.	May 10. A.	Sales.
Ontario:														
Golden Star.	1	.06	06¾	.06	.07	.06	.06¾	.06¼	.06⅝	.06	.06¾	.06	.03½	25,00
Ham Reef...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
British Col.:														
Cariboo M'k	1	.34½	.35½	.35½	.37	.35½	.37	.35½	.37	.35	.37	.36½	.38	.....
Center Star.	1	.27⅜	.30½	.30	.35	.28	.31½	.28	.31	.28½	.32	.29	.32	300
Crow's N. C.	25	70.00	80.00	70.00	80.00	70.00	80.00	70.00	80.00	70.00	80.00	75.00	83.00	.....
Deer Trail ..	1	.01⅝	.02½	.01¾	.02½	.01¾	.02¼	.01⅝	.02½	.02	.03	.01¾	.02½	1,000
Eve Star	1	.02	05	.03	.05	.03	.06	.02½	.05	.02	.05	.02	.05	.....
Fairview....	1	.02¾	.03½	.02¾	.03	.02¾	.03	.02½	.03½	.02½	.03½	.02¾	.03½	18,000
Iron Mask..	1	.25	.38	.25	.32	.28	.32	.....	.....	.24	.32	.....	.....	.....
Jim Blaine..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Knob Hill...	1	.....	.....	.45	.60	.45	.58	.45	.53	.45	.60	.45	.70	.....
Mont Cristo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mont & Lon	0.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morrison....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mount. Lion	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North Star..	1	.48	.55	.50	.60	.72	.70	.52	.60	.53	.55	.45	.55	15,00
Payne.....	1	.25	.30	.25	.30	.20	.23	.25	.30	.25¾	.35	.26	.33	.....
Princess M..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rambler	1	.24½	.26	.25	.25½	.26	.25½	.25¾	.25½	.26	.28	.25	.26	5,500
Republic....	1	.20½	.21¼	.19½	.21	.28	.29	.21	.28	.19½	.23	.19	.21½	2,300
Van Anda...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Victory Tri.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Virtue.....	1	.09	.12	.08	.11	.08	.11	.08	.11	.08	.12	.08	.11	.....
War Eagle..	1	.14	.18½	.12	.16½	.14	.16½	.15	.18	.16	.20	.16	.20	200
Waterloo...	0.10	.....	.....	.....	.....	.....	.....	.....	.....	.01	.02½	.....	.....	.....
White Bear.	1	.01⅝	.01¾	.01⅜	.....	.01¾	.02¼	.01⅝	.....	.....	.....	.....	.....	12,500
Winnipeg ..	1	.09	.06¾	.02	.07	.02	.06¾	.03	.03	.02	.05	.06	.02	.....
Develop Co.:														
B.C.G. Field	1	.....	.....	.01¾	.02¼	.01¼	.02¼	.01¾	.02¼	.01¾	.02½	.....	.....	.....
Can. G. F. S.	0.10	.04	.05½	.04	.05	.07	.10	.04	.06	.04	.05¼	.04	.05¼	.....

Total shares sold, 44,000.

COLORADO SPRINGS, COLO. §

NAME OF COMPANY.	Par val.	May 6. B.	May 6. A.	May 7. B.	May 7. A.	May 8. B.	May 8. A.	May 9. B.	May 9. A.	May 10. B.	May 10. A.	May 11. B.	May 11. A.	Sales.
Acacia.....	$1	.12	.12⅝	.12	.12⅝	.11¾	.12⅛	.11½	.11¾	11¾	.12⅛	.11¾	.11¾	14,000
Alamo.....	1	.13½	.14	.13⅝	.14	.13⅝	.14	.13¾	.14	.13⅝	.14	.13⅝	.14	10,500
Am. Con.....	1	.....	.....	.04¾	.05¼	.04	.05	.04	.05	.04	.05	.04	.05	2,000
Anaconda..	1	.39¾	.....	.39½	.....	.39¾	.....	.39¾	.....	.39½	.40	.39½	.40	2,500
Anchor.....	1	.01⅜	.01¾	.....	.02	.....	.02	.....	.02	.01⅜	.02	.01⅜	.02	.....
Anchoria L	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Antelope..	1	.01⅜	.....	.01⅜	.02	.01½	.02	.01⅜	.....	.01⅜	.02	.01⅜	.02	3,000
Aola.....	1	.04⅛	.04⅜	.03½	.04⅜	.03⅜	.04⅛	.03⅜	.04⅛	.04	.....	.01¾	.04⅜	4,500
Arcadian..	1	.....	.04	.....	.04	.....	.04	.....	.04	.....	.....	.....	.04	.....
Arg'ntum J	1	.....	.19	.17½	.18	.17⅜	.18½	.15⅜	.16⅜	.....	.17½	.16	.16½	34,700
Banner.....	1	.02½	.02⅝	.02½	.02⅝	.02	.02⅝	.02⅜	.02⅝	.02⅜	.02⅝	.02⅜	.02⅝	6,000
Battle Mt.C	1	.19¾	.21	.20	.21	.20¼	.20⅝	.20	.20½	.18	.20	.17½	.18¾	10 000
Ben Hur..	1	.....	.....	.....	.08¾	.....	.08¼	.07	.09	.....	.....	.07	.08	.....
Black Bell .	1	.10	.11	.....	.....	.....	.....	.....	.....	.09½	.12	.10	.10¼	6,000
Blue Bell..	1	.13¾	.17	.16¾	.17½	.16¾	.17	.16½	.16⅞	.16	.16⅝	.16½	.17	0,000
Bob Lee....	1	.04½	.05¼	.04¾	.04¾	.04⅝	.04¾	.04½	.05	.04½	.04⅞	.04½	.04⅞	6,000
Buckhorn..	1	.03¾	.04	.03½	.03¾	.03⅜	.....	.03¼	.04	.03¾	.03⅝	.03½	.03⅞	1,500
Cadillac....	1	.01⅞	.02¼	.01⅞	.02¼	.01⅝	.02½	.01⅞	.....	.01⅞	.02	.01¾	.02	.....
Central C'n	1	.08	.08⅜	.08¼	.08¾	.08¼	.08⅜	.08	.08⅜	.07⅜	.....	.07½	.08	7,000
Champlon..	1	.05½	.06¼	.05⅜	.05⅝	.05⅜	.06	.05	.06	.05¼	.....	.05	.06	4,000
Chicolo	1	.02¾	.02¾	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝	.02¼	.02¾	.02½	.02¾	4,000
C. K. & N..	1	.02⅜	.02½	.02¾	.02½	.02⅜	.02½	.02¼	.02⅜	.02¾	.02¾	.05	.06	3,000
C. C.Col'bia	1	.14½	.14¾	.14¾	.15	.16	.16¼	.16⅜	.16¾	.15½	.15¾	.14¼	.15¼	72,000
C. C. G. Ext	1	.07	.....	.07	.13	.08¼	.08½	.07	.09	.07½	.08	.07½	.12¾	5,000
C. C. & Man	1	.07½	.07⅝	.07¼	.07½	.07½	.07⅝	.08½	.08¼	.08¼	.08½	.08	.09	38,500
Copper Mt.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.08¾	.....
Creede& CC	1	.....	.08	.07½	.08	.06	.08	.....	.07⅞	.....	.08	.....	.....	1,000
C. C. Con...	1	.07⅝	.07⅞	.07½	.07⅞	.07	.07⅜	.07	.07⅜	.07⅜	.08	.07¾	.08	4,500
Dante.....	1	.06	.06¼	.06	.06¼	.....	.06½	.06	.06¼	.06¼	.06½	.06	.08	22,000
Des Moines	1	.05½	.05⅝	.05½	.....	.....	.....	.....	.....	.05¼	.06	.05¾	.06⅜	3,000
Eclipse.....	1	.12⅜	.....	.13¾	.18½	.13	.13¼	.12½	.12¾	.11	.11⅜	.12	.06	197,000
Elkton Con	1	1.71	.....	1.74	1.75	1.77	1.78	1.75½	1.76½	1.73½	1.74½	1.73	.12¾	25,050
El Paso G..	1	.37½	.39	.26	.....	.38	.39	.39¼	.39¾	.37¾	.39	.37½	1.75¼	6,556
Enterprise.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.09	.....
F. Rawlings	1	.25	.29	.23	.25¼	.25	.30	.....	.....	.....	.30	.26	.....	2,500
Findley....	1	.12	.12½	.12	.12¾	.....	.....	.11¾	.12½	.11¾	.12	.11½	.30	11,000
Garf. Conn.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.12	.....
Golden Fl..	1	.....	.....	.....	.40	.....	.....	.....	.....	.....	.....	.....	.....	200
Gold Hill...	1	.01½	.01⅝	.01⅜	.01⅝	.01¼	.01⅝	.01⅜	.01⅝	.01½	.01⅝	.01½	.40	37,500
Gold Sov'n.	1	.05½	.06¼	.05¾	.06¼	.05	.05¾	.05⅝	.06¼	.05¾	.06¼	.05⅝	.01¾	1,000
Hayden....	1	.01⅝	.01⅞	.01½	.01⅞	.01½	.01⅞	.01½	.01⅞	.01⅝	.01⅞	.01½	.06	1,000
Humboldt..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.02	.....
Ida May....	1	.17	.18	.17	.18	.17	.18	.17	.18	.17	.18	.....	.....	.....
Ing. Con...	½	.....	.....	.19½	.20	.19¼	.20	.19¼	.20¼	.19⅝	.20	.....	.18	27,000
Ironclad....	1	.....	.....	.05½	.06⅝	.05½	.06⅜	.05½	.06¼	.06⅜	.06⅝	.13½	.20	1,000
Isabella....	1	.....	.....	.63½	.64¼	.64½	.54½	.63½	.64	.65	.65½	.06½	.06⅜	18,700
Jack Pot...	1	.50	.53	.50⅜	.52	.50	.51¼	.50	.51	.49	.49½	65	.65⅜	2,200
Josephine..	1	.01¼	.01⅝	.01¼	.01½	.01¼	.01⅝	.01¼	.....	.01¼	.....	.49	.50	.....
Key West..	1	.01½	.02	.01⅜	.02¼	.01½	.....	.01½	.02	.01⅝	.02	.....	.....	.....
Lexington .	1	.07⅜	.....	.07¾	.08	.08	.08¼	.08	.08½	.08½	.08¾	.01½	.02	11,000
Magnet R..	1	.02½	.03	.02⅜	.....	.02⅜	.....	.02¼	.03¼	.03	.03¼	.07¾	.08½	8,500
Margaret...	1	.01¾	.01⅝	.01¼	.01⅝	.....	.02	.01	.02	.....	.02	.02¾	.03	4,000
Margery....	1	.02	.02½	.02⅛	.02¼	.02	.02½	.....	.02½	.02	.02⅛	.....	.02	.....
Matoa.....	1	.....	.....	.....	.17	.....	.....	.....	.....	.....	.17	.02	.02½	.....
Midway.....	1	.03	.03¼	.03	.03¼	.03	.03¼	.03	.03¼	.03	.03¼	.....	.....	.....
M. J. T.....	1	.02¼	.02¾	.02½	.02¾	.02	.02¾	.02	.02¾	.02½	.02¾	.03	.03¼	5,000
Mobile.....	1	.02	.02¾	.....	.02¼	.....	.02¾	.....	.....	.....	.....	.02½	.02¾	2,000
Moll.Dwyer	1	.04	.04½	.04¼	.04¾	.04	.....	.04	.....	.04	.04½	.02¾	.02½	10,000
Mollie Gib.	1	.....	.30	.....	.23¾	.24¼	.27	.27¾	.....	.23¼	.29	.04	.04½	8,600
Monarch...	1	.04¾	.05	.04¾	.05	.04¾	.05	.04¾	.05	.04¾	.05	.29½	.35	2,000
Montreal...	1	.03	.04	.03	.04	.03	.04	.03	.04	.03	.04	.04½	.05	.....
Moon-A'c'r	1	.....	.....	.26	.30	.....	.....	.23	.....	.26	.30	.03	.04	500
Morning S.	1	.03	.03¼	.02⅞	.03¼	.02⅞	.03⅜	.02⅞	.03¼	.03	.03⅜	.26½	.29	.....
Mtn.Beauty	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.02¾	.....	.....
Mt. Rosa...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.01¾	.....
National...	1	.03¾	.03⅞	.03¾	.03⅞	.03⅝	.03⅞	.03⅝	.03⅞	.03½	.03¾	.....	.....	16,000
Nellie V....	1	.04	.04⅞	.....	.04¾	.04¾	.05	.04½	.04⅝	.05	.04⅝	.03½	.03¾	8,000
New Haven	1	.06⅝	.06¾	.06¼	.....	.....	.....	.16½	.07	.07	.07	.04½	.04⅝	3,000
Olive B'nch	1	.03¼	.03½	.....	.03¾	.03½	.03¼	.02⅞	.....	.06½	.03⅛	.06⅞	.06¾	3,000
Ophir.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.02⅞	.....	.02⅞	.....	.....
Oriole.....	1	.02⅞	.....	.03	.02⅞	.....	.02¾	.03	.....	.02	.03	.....	.....	1,000
Orphan.....	1	.14	.16	.14	.....	.14	.16	.....	.....	.16	.....	.02¾	.02⅞	.....
Pelican.....	1	.....	.01⅞	.01⅛	.01⅜	.01⅞	.01⅝	.01⅞	.14	.10⅞	.....	.09¾	.16	.....
Pharmacist	1	.08⅜	.08¾	.08⅛	.08⅜	.08⅜	.09	.09	.09¼	.....	.02	.....	.....	108,000
Pilgrim.....	1	.07	.....	.....	.....	.07½	.....	.07½	.09	.07	.09¾	.02	.02	3,000
Pinnacle...	1	.10	.10⅜	.10	.10¼	.10	.....	.10¼	.06⅞	.10¼	.05	.07½	.07½	5,500
Portland..	1	3.

STOCK QUOTATIONS.

LONDON.

May 3.

Name of Company.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers £ s. d.	Quotations. Sellers £ s. d.
American:			£ s. d.	s.d.			
Alaska Goldfields, g	Alaska	£300,000	1 0 0	2 3	Jan., 1901	16 3	18 9
Alaska-Treadwell, g.	"	1,400,000	5 0 0	1 6	Apr., 1901	4 17 6	5 2 6
Anaconda, c., s	Montana	6,000,000	5 0 0	8 2	" "	10 10 0	10 12 6
British Am. Corp	British Col'mbia	1,500,000	1 0 0	2 0	Mar., 1900	5 0	5 6
Copiapo, c	Chile	200,000	2 0 0	3 4	Dec., 1900	3 7 6	3 10 0
De Lamar, g., s	Idaho	400,000	1 0 0	1 0	May., 1901	4 0	5 0
El Oro, g	Mexico	1,000,000	1 0 0	1 0	Feb., 1901	1 7 6	1 10 0
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	Oct., 1899	1 17 6	2 0 0
Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Jan., 1900	5 0	7 6
Hall Mg. & Sm., c., s	British Col	325,000	1 0 0			8 6	9 6
Le Roi, g	" "	1,000,000	5 0 0	5 0	Nov., 1899	9 0 0	9 5 0
Le Roi No. 2, g	" "	120,000	5 0 0			5 7 6	5 12 6
Lillie, g	Colorado	250,000	1 0 0	2½	Apr., 1900	2 6	7 6
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	3 0	3 6
Mountain Copper	California	1,250,000	5 0 0	7 0	Apr., 1901	4 12 6	4 17 6
Stratton's Independence	Colorado	1,100,000	1 0 0	9	" "	1 16 3	1 18 9
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	Dec., 1900	1 0 0	1 2 3
Utah Con.,g.(Highl'nd Boy)	Utah	300,000	1 0 0	5 0	Apr., 1901	7 2 6	7 7 6
Velvet, g	British Col'mbia	100,000	1 0 0			11 3	13 9
Ymir, g	British Col'mbia	200,000	1 0 0	1 0	Jan., 1901	1 12 6	1 15 0
European:							
Linares, l	Spain	45,000	3 0 0	7 0	Mar., 1901	3 10 0	6 10 0
Mason & Barry, c., sul	Portugal	420,000	2 0 0	£1	" "	4 0 0	4 5 0
*Rio Tinto, c	Spain	1,625,000	5 0 0	£2	Nov., 1900	53 5 0	53 10 0
" " pref	" "	1,625,000	5 0 0	2 6	" "	6 2 6	6 5 0
Tharsis, c	"	1,250,000	2 0 0	15 0	Apr., 1900	7 12 6	7 17 6
Australian:							
Assoc. Gold Mines	W. Australia	500,000	1 0 0	1 6	Jan., 1900	3 0 0	3 2 6
Broken Hill Prop., s	N. S. Wales	384,000	8 0	1 0	May, 1901	2 5 0	2 6 0
Great Boulder Prop	W. Australia	175,000	2 0	6	Feb., 1901	1 6 6	1 7 0
Hannan's Brownhill, g	"	140,000	1 0 0	7 6	Oct., 1900	4 11 3	4 13 9
Ivanhoe Gold Corp	"	1,000,000	5 0 0	5 0	Nov., 1900	9 10 0	9 15 0
Kalgurlie, g	"	120,000	1 0 0	rts.	Oct., 1899	4 12 6	4 17 6
Lake View Consols, g	"	250,000	1 0 0	5 0	Aug., 1900	9 17 6	10 12 6
Mt. Lyell M. & R., l., c	Tasmania	900,000	3 0 0	2 0	Apr., 1901	4 17 6	5 2 6
Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	May, 1901	4 12 6	4 17 6
Waihi g	New Zealand	330,000	1 0 0	2 6	June, 1901	7 10 0	7 15 0
Indian:							
Champion Reef, g	Colar Fields	220,000	10 0	4 0	May, 1901	6 3 9	6 6 3
Mysore Gold, g	"	250,300	10 0	rts.	Dec., 1900	5 18 9	6 1 3
Nundyroog, g	"	242,000	1 0 0	2 9	Mar., 1901	4 7 6	4 10 0
Ooregum, g	"	145,000	1 0 0	4 0	Apr., 1901	5 3 9	5 6 3
" " pref. g	"	120,000	1 0 0	4 0	" "	6 1 3	6 3 9
African:							
British S. Africa, chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 8 9	3 11 3
Cape Copper, c	"	600,000	1 0 0	5 0	Jan., 1901	5 10 0	5 15 0
" " pref	"	150,000	2 0 0	5 0	" "	5 0 0	5 0 6
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug., 1899	5 15 0	6 0 0
Con. Deep Level, g	"	200,000	1 0 0	x all	June, 1898	1 2 6	1 3 6
Crown Reef, g	"	120,000	1 0 0	18 0	Nov., 1899	15 15 0	15 15 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	£1	Jan., 1901	34 15 0	35 0 0
Ferreira, g	Transvaal	90,000	1 0 0	30 0	Aug., 1899	21 5 0	21 15 0
Geldenhuis Deep, g	"	350,000	1 0 0	8 0	" "	10 10 0	10 15 0
Geldenhuis Est., g	"	300,000	1 0 0	10 0	" "	6 17 6	7 0 0
Henry Nourse, g	"	125,000	1 0 0	10 0	Apr., 1900	8 15 0	9 0 0
Jagersfontein, d	Orange Fr. St	1,000,000	5 0 0	6 0	Dec., 1900	18 10 0	19 0 0
Johannesburg Con. Invet	So. Africa	2,750,000	1 0 0	2 0	Aug., 1899	2 5 0	2 7 6
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Aug., 1899	6 5 0	6 15 0
Langlaagte Estate, g	"	470,000	1 0 0	3 0	Sept., 1899	3 7 6	3 10 0
May Con., g	"	200,000	1 0 0	6 0	Aug., 1899	4 10 0	4 15 0
Meyer & Charlton, g	"	100,000	1 0 0	8 0	July, 1899	5 10 0	5 15 0
Namaqua, c	Cape Colony	200,000	2 0 0	4 0	Dec., 1900	5 5 0	5 10 0
Primrose (New), g	Transvaal	300,000	1 0 0	6 0	Aug., 1899	4 6 3	4 8 9
Rand Mines, g	So. Africa	490,000	1 0 0	15 0	" "	43 5 0	43 10 0
Robinson, g	Transvaal	2 750,000	5 0 0	8 0		9 12 6	9 17 0
Sheba, g	"	1,100,000	1 0 0	0 6	July, 1898	1 1 3	1 2 0
Sim. & Jack Prop., g	"	5,000,000	5 0 0	4 0	July, 1899	6 6 3	6 8 9
Wolhuter, g	"	850,000	4 0 0	2 0	Feb., 1899	4 15 0	5 0 0

C, copper. D, diamonds. G, gold. L, lead. S, silver. * Ex-Dividend.

DENVER, COLO.‡

Name of Company.	Par val.	May 6 B.	May 6 A.	May 7. B.	May 7. A.	May 8. B.	May 8. A.	May 9. B.	May 9. A.	May 10. B.	May 10. A.	May 11. B.	May 11. A.	Sales.
Acacia	1	.12	.....	.12	.12¾	.12	.12⅛	.11	.11¾	10	.....	.....	.....	12,000
Alamo	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Anaconda	1	.....	.....	.40	.....	.39	.....	.....	.....	.....	.....	.....	.....	.....
Arg. J	1	.19¼	.21	.15¾	.17	.18	.....	.....	.13½	.16½	.....	.....	.....	.....
Dictator	1	.....	.....	.01⅜	.01⅝	.01⅜	.01⅝	.01⅜	.01½	.01¼	.....	.....	.....	.....
Elkton	1	.....	.....	1.75	.....	.....	.....	.....	1.76	.....	.....	.....	.....	.....
Ironclad	1	.06	.06¼	.....	.06	.05¾	.06¼	.....	.....	.06	.06¾	.....	.....	11,000
Isabella	1	.....	.....	.....	.....	.....	.....	.....	.64½	.....	.....	.....	.....	.....
Josephine	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Magnet R	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
National	1	.03¾	.03⅞	.03¾	.03⅞	.03⅝	.03⅞	.....	.....	.03¾	.04	.....	.....	7,500
New Haven	1	.06½	.....	.06½	.07	.....	.....	.06½	.07	.06⅜	.07	.....	.....	.....
Reno	1	.02	.03	.02⅝	.03	.02⅜	.02⅞	.02⅜	.....	.....	.....	.....	.....	7,000
Republic	1	.....	.....	.....	.....	.....	.....	.05⅜	.05¾	.04⅞	.05	.....	.....	7,000

‡ Official Quotations Denver Stock Exchange. Total sales, 44,500 shares.

SPOKANE, WASH.

Week May 10.

Name of Company.	Par val.	B.	A.	Sales.	Name of Company.	Par val.	B.	A.	Sales.
Crystal	.....	.03	.04¼	.....	Mountain Lion	$1	.17½	.22	.....
Deer Trail Con	$1	.01⅝	.02½	.....	Princess Maud	0.10	.01¾	.01⅞	12,000
Evening Star	1	.05	.....	.....	Quilp	1	.24	.28	.....
Gold Ledge	.....	.01⅝	.02	32,500	Rambler Cariboo	0.25	.22½	.27	2,500
Jim Blaine	1	.....	.....	.....	Reservation	.....	.02	.03⅝	1,000
Lone Pine-Surp. Con	1	.06	.07	1,000	Sullivan	.....	.06	.08¼	10,000
Morning Glory	0.10	.04½	.05	18,000	Tom Thumb	.....	.1!	.12	2,000

PARIS.

April 25.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Opening.	Prices. Closing.
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	85.00	1,815.00	1,814.00
" " Firminy	" "	" "	3,000,000	500	175.00	3,180.00	3,525.00
" " Fives-Lille	" "	" "	12,000,000	500	.....	462.00	462.00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	5,540.00	4,500.00
" " la Marine	France	Steel mfrs	20,000,000	500	.....	1,549.00	1,529.00
Anzin	"	Coal	.....	.....	.....	360.00	5,700.00
Boleo	Lower Cal	Copper	500	176.00	2,640.00	2,720.00	
Briansk	Russia	Coal & iron	500	.....	617 00	398.00	
Champ d'Or	S. Africa	Gold	3,875,000	25	3.75	33.75	36.00
Courrieres	France	Coal	600,000	900	90.00	2,409.00	2,360.00
Dombrowa	Russia	"	.....	500	75.00	985.00	1,005.00
Dynamite Centrale	France	Explosives	.....	500	22.50	434.00	870.00
Escombrera-Bleyberg	Spain	Lead	.....	500	70.00	895.00	910.00
Fraser River	Brit. Col'mb	Gold	250,000	25	.....	6.00	5.50
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	147.50	144.00
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	420.00	430.00
Malfidano	Italy	Zinc	12,500,000	500	50.00	624.00	626.00
Metaux, Cie. Fran. de	France	Metal d'lers	25,000,000	500	10.00	465.00	485.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	55.00	927.00	945.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	625.00	908.00
Napthe Nobel	"	"	.....	.....	.....	527.50	510.00
" " parts	"	"	.....	.....	.....	10,550.00	10,300.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	17.50	525.00	525.00
Penarroya	Spain	Coal, etc	.....	500	100.00	1,160.00	1,180.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	1.75	2.00
Salines de l'Est	France	Salt	.....	500	5.00	217.00	215.00
Salines du Midi	"	"	.....	500	25.00	835.00	850.00
Vielle Montagne	Belgium	Zinc	9 000,000	80	36?00	626.00	630.00

DIVIDENDS.

COAL, IRON, OIL, AND INDUSTRIAL COMPANIES.

Number.	Name and Location of Company.		Authorized Capital Stock.	Shares. Issued.	Shares. Par Val	Dividends. Paid, 1901.	Dividends. Total to Date.	Dividends. Latest. Date.	Dividends. Latest. Amt.
1	Alabama Coal & Iron, pf	Ala	$2,500,000	25,000	$100	$43,750	$262,500	Mar., 1901	1.75
2	Altoona Coal & Coke	Pa	2,500,000	250 000	10	75,000	75,000	Jan., 1901	.30
3	Am. Agricul. Chem., pf.	U. S.	20,000,000	170,449	100	510,000	2,040,000	Apr., 1901	3.00
4	American Cement	Pa	2,100,000	200,000	10	80,000	220,000	Jan., 1901	.40
5	American Coal	Md	1,500,000	60,000	25	75,000	1,057,500	Mar., 1901	1.25
6	Am. Fuel Oil	Cal	100,000	100,000	1	1,000	15,000	Jan., 1901	.01
7	Am. Iron & Steel, com	Pa	17,000,000	34,000	50	8,500	42,500	Jan., 1901	.25
8	Am. Iron & Steel, pf	Pa	3,000,000	60,000	50	37,500	237,480	Jan., 1901	.62½
9	Am. Sheet Steel, pf	U. S.	26,000,000	245,000	100	857,500	857,500	Apr., 1901	1.75
10	Am. Steel Hoop, pf	U. S.	14,000,000	140,000	100	490,000	1,715,000	Apr., 1901	1.75
11	Am. Steel & Wire, com	U. S.	50,000,000	500,000	100	1,500,000	4,125,000	Apr., 1901	1.25
12	Am. Steel & Wire, pf	U. S.	40,000,000	400,000	100	1,400,000	7,000,000	Apr., 1901	1.75
13	Arizona Western Oil	Cal	100,000	100,000	1	8,000	14,000	Apr., 1901	.02
14	Bethlehem Steel	Pa	15,000 000	300,000	50	300,000	1,200,000	June, 1901	.50
15	Buckhorn Oil	Cal	200,000	16,000	10	.....	3,800	Mar., 1900	.05
16	Burlington Oil	Cal	60,000	60,000	1	600	4,200	Jan., 1901	.01
17	California Oil & Gas	Cal	2,000,000	200,000	10	250,000	250,000	Jan., 1901	1.25
18	Cambria Iron	Pa	10,000,000	169,320	50	169,320	846,600	Apr., 1901	1.00
19	Cambria Steel	Pa	16,000,000	320,000	50	320,000	1,920,000	May., 1901	.50
20	Central Oil	W.Va	1,500,000	60,000	25	25,000	67,500	May., 1901	.37½
21	Central Oil	Cal	750,000	662,800	1	39,768	112,676	Apr., 1901	.03
22	Central Point Con. Oil	Cal	200,000	190,000	1	11,400	19,000	May., 1901	.02
23	Colo. Fuel & Iron, pf	Colo	2,000,000	20,000	100	80,000	1,240,000	Feb., 1901	4.00
24	Consolidation Coal	Md	10,250,000	102,500	100	205,000	5,318,000	Feb., 1901	2.00
25	Continental Oil	Cal	300,000	240,000	1	7,200	7,200	Apr., 1901	.03
26	Crucible Steel, pf	U. S.	25,000,000	250,000	100	426,991	853,982	Mar., 1901	1.75
27	Dabney Oil	Cal	1,000,000	1,000,000	1	10,000	10.000	May., 1901	.01
28	Diamond Star Oil	Cal	250,000	100,000	1	.....	6,250	Nov., 1900	.02
29	Diamond State Steel	Del	3,000,000	150,000	10	60,000	160,000	Jan., 1901	.40
30	Empire Steel & Iron, pf	U. S.	5,000,000	23,700	100	35,550	213,300	Jan., 1901	1.50
31	Federal Steel, com	U. S.	100000,000	464,843	100	2,324,215	4,067,377	Feb., 1901	5.00
32	Federal Steel, pf	U. S.	100000,000	532,609	100	1,597,828	8,255,482	Apr., 1901	1.50
33	Flat Top C. L. Ass'n, com	Va.	5,000,000	37,141	100	74,282	352,840	May., 1901	1.00
34	Flat Top C. L. Ass'n, pf	Va.	5,000,000	37,141	100	74,282	2,024,168	May., 1901	1.00
35	Four Oil	Cal	300,000	300,000	1	9,000	9,000	Apr., 1901	.01
36	General Chem., com	U. S.	12,500,000	71,679	100	71,679	485,945	Mar., 1901	1.00
37	General Chem., pf	U. S.	12,500,000	82,600	100	247,800	1,013,678	Apr., 1901	1.50
38	Globe Oil	Cal	600,000	600,000	1	3,000	3,000	Apr., 1901	.00½
39	Gray Eagle Oil	Cal	250,000	100,000	2½	50,000	170,000	Jan., 1901	.50
40	Great Western Oil	Cal	100,000	10,000	10	.....	10,000	Oct., 1900	.10
41	Home Oil	Cal	100,000	100,000	1	40,000	240,000	Apr., 1901	.10
42	Homestake Oil	Cal	100,000	10,000	10	4,000	27,000	Mar., 1901	.20
43	Jefferson&Clearf. C'l,cm	Pa	1,500,000	15,000	100	.....	30,000	Aug., 1900	2.00
44	Jefferson&Clearf. C'l,pf	Pa	1,500,000	15,000	100	37,500	225,000	Feb., 1901	2.50
45	Kern Oil	Cal	100,000	100,000	1	25,000	375,000	Jan., 1901	.25
46	Lehigh Coal & Nav	Pa	14,346,650	286,933	50	.....	18,516,990	Oct., 1900	1.50
47	Maryland Coal, pf	Md	1,885,005	18,850	100	.....	645,869	Dec., 1900	3.00
48	Monongahela R. Coal, pf	Pa	10,00),000	200,000	50	350,000	700,000	Jan., 1901	1.75
49	Montana Coal & Coke	Mont	5,000,000	200,000	25	.....	120,000	Oct., 1900	.30
50	National Salt, com	U. S.	7,000,000	70,000	100	210,000	405,000	May., 1901	1.50
51	National Salt, pf	U. S.	5,000,000	50,000	100	175,000	700,000	May., 1901	1.75
52	National Steel, pf	U. S.	27,000,000	270,000	100	472,500	3,780,000	Mar., 1901	1.75
53	National Tube, com	U. S.	40,000,000	398,604	100	1,195,812	2,391,624	May., 1901	1.50
54	National Tube, pf	U. S.	40,000,000	399,963	100	1,399,870	4,899,546	Apr., 1901	1.75
55	New Central Coal	Md	1,000,000	50,000	20	.....	510,000	Nov., 1900	.40
56	New Haven Iron & Steel	Conn	500,000	100,000	$5	$22,500	$117,500	Apr., 1901	.10
57	Oceanic Oil	Cal	$100,000	100,000	1	.....	2,000	Dec., 1900	.01
58	Ohio & Ind. Nat. Gas	U. S.	10,000,000	90,000	100	90,000	450,000	Mar., 1901	1.00
59	Pacific Coast Borax	Cal	2,000,000	19,000	100	76,000	838,500	Apr., 1901	1.00
60	Park Crude Oil	Cal	100,000	82,146	1	.....	4,897	Sept., 1900	.01
61	Pennsylvania Coal	Pa	5,000,000	100,000	50	.....	19,700,000	Nov., 1900	2.00
62	Pennsylvania Salt Mfg	Pa	5,000,000	100,000	50	150,000	12,700,000	Apr., 1901	3.00
63	Pennsylvania Steel, pf	Pa	25,000,000	250,000	100	52,500	183,750	Apr., 1901	1.75
64	Phila. Gas, com	Pa	14,752,131	295,042	50	405,684	1,143,292	Apr., 1901	.75
65	Phila. Gas, pf	Pa	3,998,350	79,967	50	99,959	299,877	Mar., 1901	1.25
66	Pittsburg Coal., pf	Pa	32,000,000	320,000	100	1,120,000	3,360,00	Apr., 1901	1.75
67	Producers' & Con. Oil	Cal	1,000,000	10,000	100	4,000	57,000	Mar., 1901	.10
68	Republic Iron & Steel, pf	U. S.	25,000,000	203,069	100	710,742	2,487,596	April, 1901	1.75
69	Rex Oil	Cal	500,000	85,000	5	.....	26,000	Oct., 1900	.03
70	San Joaquin Oil	Cal	100,000	100,000	1	10,000	10,000	Jan., 1901	.10
71	Shawmut Oil	W.Va	1,250,000	50,000	25	50,000	50,000	May., 1901	.50
72	Shelby Iron	Ala	1,000,000	10,000	100	50,000	300,000	May., 1901	5.00
73	Sloss-Sheffield Ir.&St., pf	U. S.	20,000,000	67,000	100	231,250	573,250	Apr., 1901	1.75
74	So. Cal. Oil & Fuel	Cal	300,000	200,000	1	15,000	21,000	Apr., 1901	.01½
75	Standard Oil (of N. J.)	U. S.	100000,000	975,000	100	19,500,000	92,625,000	Mar., 1901	20.00
76	Sunday Lake Iron	Mich	1,000,000	40,000	25	40,000	40,000	Feb., 1901	1.00
77	Susquehanna I. & S., pf	Pa	1,500,000	300,000	5	22,500	537,500	Jan., 1901	.07½
78	Tenn. Coal, I. &R.R., com	Tenn	23,000,000	225,536	100	.....	1,102,144	Nov., 1900	2.00
79	Tenn. Coal, Ir. & R.R., pf	Tenn	248,000	2,480	100	9,920	252,960	May., 1901	2.00
80	Texas & Pacific Coal	Tex	2,000,000	20,000	100	60,000	1,860,000	Apr., 1901	1.50
81	United States Crude Oil	Cal	100,000	10,000	1	.....	3,200	Dec., 1900	.03
82	United States Marble	Wash	2,000,000	2,000,000	1	8,750	8,750	Apr., 1901	.00¼
83	United States Oil	W.Va	2,500,000	100,000	25	.....	744,250	Oct., 1900	.50
84	Va.-Carolina Chem., com	U. S.	12,000,000	120,000	100	120,000	1,650,000	Mar., 1901	1.00
85	Va.-Carolina Chem., pf	U. S	12,000,000	120,000	100	440,000	4,640,000	Apr., 1901	2.00
86	Warwick Iron & Steel	Pa	1,500,000	14,133	100	.....	158,597	Nv., 1900	2.00
87	West Lake Oil	Cal	500,000	500,000	1	.....	50,000	Sept., 1900	.01
88	Westmoreland Coal	Pa	5,000,000	250,000	50	.....	750,000	Oct., 1900	1.50
89	Yukon Oil	Cal	2,500,000	100,000	2½	.....	21,000	Oct., 1900	.02

This table is corrected up to May 1st. Correspondents are requested to forward changes or additions.

DIVIDENDS.

GOLD, SILVER, COPPER, ZINC, LEAD AND QUICKSILVER COMPANIES.

Number.	Name and Location of Company.		Authorized Capital Stock.	Shares. Issued.	Par Val	Dividends. Paid, 1901.	Total to Date.	Latest. Date.	Amt.
1	Acacia, g.	Colo.	$1,500,000	1,500,000	$1	.....	$45,000	Dec.. 1900	.01
2	Adams, s.l.c.	Colo..	1,500,000	150,000	10	$7,500	708,500	Apr.. 1901	.05
3	Etna Con., g.	Cal ..	500,000	100,000	5	.....	225,000	Apr.. 1900	.15
4	Alaska Goldfields.	Alask	1,500,000	250,000	5	127,500	252,500	Jan.. 1901	.51
5	Alaska-Mexican, g.	Alask	1,000,000	180,000	5	36,000	537,031	Apr.. 1901	.10
6	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	150,000	4,670,000	Apr.. 1901	.37½
7	Alice, g. s.	Mont.	10,000,000	400,000	25	.....	1,875,000	Apr.. 1898	.05
8	Alliance, g.	Colo..	500,000	500,000	1	.....	47,500	Nov.. 1899	.07
9	Amalgamated, c.	Mont.	75,000,000	750,000	100	3,000,000	10,500,000	Apr.. 1901	2.00
10	Amanda, g.	Colo..	1,000,000	1,000,000	1	.....	10,000	June. 1900	.01
11	Amazon, g.	Colo..	600,000	600,000	1	.....	121,882	May.. 1900	.10
12	American, g.	Colo..	3,000,000	300,000	10	.....	446,000	Dec.. 1899	.07
13	Amer. Sm. & Ref., pref.	U. S..	50,000,000	500,000	100	959,000	3,641,553	Apr.. 1901	1.75
14	Am. Zinc, Lead & Sm.	Mo..	2,500,000	60,000	25	.....	180,000	Jan.. 1900	1.00
15	Anaconda, c.	Mont.	30,000,000	1,200,000	25	2,400,000	19,350,000	Apr.. 1901	2.00
16	Anchoria-Leland, g.	Colo..	600,000	600,000	1	.....	198,000	Apr.. 1899	.03
17	Anglo-Mexican, g.	Mex..	2,001,625	400,230	25	.....	1,825,048	Dec.. 1899	.24
18	Appie Ellen, g.	Colo..	600,000	600,000	1	.....	25,000	Nov.. 1898	.04
19	Apollo Con., g.	Alask	1,000,000	100,000	10	.....	210,000	Jan.. 1900	.07
20	April Fool, g.	Nev..	500,000	500,000	1	.....	16,000	Oct.. 1899	.03
21	Argonaut, g.	Cal..	2,000,000	200,000	10	.....	490,000	May.. 1900	.05
22	Arizona, c.	Ariz..	3,190,550	.....	.....	421,153	1,886,001	Mar.. 1901	1.32
23	Arlington, s. l.	B. C..	1,000,000	1,000,000	1	20,000	20,000	Mar.. 1901	.02
24	Associated, g.	Colo..	1,250,000	1,250,000	1	.....	84,000	Feb.. 1899	.01
25	Atlantic, c.	Mich.	1,000,000	40,000	25	80,000	880,000	Feb.. 1901	2.00
26	Bald Butte, g. s.	Mont.	250,000	250,000	1	75,000	997,148	May . 1901	.06
27	Bankok-Cora Belle, g.	Colo..	600,000	600,000	1	.....	107,510	July.. 1896	.01
28	Big Seven, g.	Cal..	100 000	100,000	1	.....	6,000	Apr... 1898	.03
29	Big Six, g. s. l.	Colo..	500,000	500,000	1	.....	15,000	May.. 1898	.00½
30	Boston, q.	Cal..	1,000,000	100,000	10	.....	20,000	Jan.. 1900	.10
31	Boston-Aurora, pref.	Mo...	800,000	32,000	25	.....	66,160	May.. 1900	.50
32	Boston & California, g.	Cal..	600,000	600,000	1	.....	72,000	June. 1899	.06
33	Boston & Colo. Smelting	Colo..	750,000	15,000	50	22,500	337,600	Apr.. 1901	.75
34	Boston Duenweg, z.	Mo...	1,000,000	40,000	10	.....	56,000	June. 1900	.10
35	Boston Get There, z.	Mo...	250,000	22,500	10	.....	20,250	Apr.. 1900	.10
36	Boston Gold-Copper Sm.	Colo..	1,000,000	1,000,000	1	50,000	100,000	May . 1901	.02½
37	Boston & Mont. Con., c. s. g	Mont.	3,750,000	150,000	25	3,000,000	23,975,000	May . 1901	10.00
38	Bosun, s. l.	B. C..	250,000	50,000	5	12,500	12,500	Apr.. 1901	.25
39	Breece, l. s.	Colo..	5,000,000	200,000	25	10,000	110,000	Feb.. 1901	.05
40	Buffalo Hump, g.	Idaho	1,000,000	100,000	10	25,000	300,000	Jan.. 1901	.10
41	Bull Hill Con., g.	Colo..	1,500,000	1,500,000	1	37,500	52,500	Mar.. 1901	.00½
42	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	.....	2,498,400	June. 1900	.10
43	Bunker Hill & Sullivan.	Idaho	3,000,000	300,000	10	105,000	1,158,000	May . 1901	.07
44	Butte & Boston Con., c.	Mont.	2,000,000	200,000	10	.....	1,000,000	Dec.. 1900	5.00
45	Butterfly-Terrible, g.	Colo..	1,500,000	1,250,000	1	15,625	15,625	Apr.. 1901	.00¾
46	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	1,500,000	74,350,000	Apr.. 1901	15.00
47	Cariboo-McKinney, g.	B. Col	1,250,000	1,250,000	1	.....	478,087	Oct... 1900	.01½
48	Centen'l-Eureka, g. s. l. c.	Utah.	5,000,000	100,000	25	100,000	2,517,700	Apr.. 1901	.50
49	Center Creek, l. z.	Mo....	1,000,000	100,000	10	.....	40,000	Dec.. 1900	.20
50	Center Star, g.	B. C..	3,500,000	3,500,000	1	105,000	175,000	Apr.. 1901	.01
51	Central Eureka, g. s.	Cal..	4,000,000	400,000	10	20,000	20,000	Apr.. 1901	.05
52	Central Lead, l.	Mo...	1,000,000	10,000	100	20,000	227,000	Apr.. 1901	.50
53	Champion, g. s.	Cal..	340,000	34,000	10	.....	402,300	Dec.. 1899	.25
54	Cloverdale, z.	Mo...	1,000,000	100,000	10	.....	80,000	July.. 1900	.20
55	C. O. D., g.	Colo..	500,000	500,000	1	.....	25,000	Mar.. 1896	.01
56	Colonial, l.	Mo...	1,000,000	1,000,000	1	.....	10,000	Aug.. 1899	.01
57	Columbia, l.	Mo...	500,000	48,500	10	.....	12,125	June. 1900	.05
58	Columbian Hyd., c.	C'l'm	375,000	75,000	5	.....	454,500	Jan.. 1899	.12
59	Commodore, g.	Colo..	1,200,000	1,200,000	1	.....	432,000	Jan .. 1899	.04
60	Commonwealth, z., pref.	Mo ..	500,000	100,000	5	.....	50,000	June. 1900	.05
61	Consolidated Gold Mines	Colo..	1,000,000	1 000,000	1	30,000	160,000	Mar.. 1901	.01
62	Con. Mercer Gold Mines.	Utah.	5,000,000	1,000,000	5	125,000	1,716,000	May . 1901	.12½
63	Consolidated, z. l., pf.	Mo...	400,000	400,000	1	.....	8,000	Jan.. 1900	.20
64	Copiapo, c.	Chile.	1,000,000	100,000	10	.....	2,520,000	July.. 1899	1.44
65	Creede & Cripple C'k., g.	Colo..	800,000	800,000	1	16,000	16,000	May . 1901	.02
66	Cripple Creek Con., g.	Colo..	2,000,000	2,000,000	1	.....	160,000	Mar.. 1900	.08
67	Crœsus, g.	Cal...	1,000,000	200,000	5	46,000	197,300	May . 1901	.05
68	Crowned King, g. s.	Ariz..	6,000,000	600,000	10	.....	242,760	May . 1899	.02
69	Dalton & Lark, g. s. l.	Utah.	2,500,000	2,500,000	1	.....	87,500	Mar.. 1896	.00½
70	Daly West, g.	Utah.	3,000,000	150,000	20	180,000	787,500	Apr.. 1901	.30
71	Deadwood-Terra, g.	S. D..	5,000,000	200,000	25	.....	1,350,000	May . 1898	.15
72	Deer Trail Con., g.	Wash	3,000,000	3,000,000	1	.....	55,000	Dec.. 1899	.00½
73	De Lamar, g. s.	Idaho	2,000,000	400,000	5	96,000	2,490,000	May . 1901	.24
74	Della S., g. s.	Colo..	1,000,000	1,000,000	1	.....	60,000	Jan.. 1897	.01
75	Dewey Con., g.	Utah.	10,000	10,000	1	2,250	4,850	Feb.. 1901	.07½
76	Dixie, g.	Utah.	125,000	125,000	1	.....	10,000	Apr.. 1900	.02
77	Doctor-Jack Pot Con., g	Colo..	3,000,000	2,900,000	1	116,000	116,000	Apr.. 1901	.01
78	Doe Run, l.	Mo...	1,500,000	10,000	100	30,000	447,072	Apr.. 1901	1.50
79	Ducktown, c. i. sul. (ord)	Tenn.	374,000	7,480	50	.....	133,144	May.. 1900	5.00
80	Ducktown (founder).	Tenn.	1,000	200	5	.....	66,160	May.. 1900	125.00
81	Eldorado, g.	Cal ..	1,000,000	100,000	10	.....	10,000	July.. 1899	.10
82	Elkton Con., g.	Colo..	3,000,000	2,500,000	1	75,000	1,054,461	Mar.. 1901	.03
83	El Oro. g. s.	Mex..	5,000,000	1,000,000	5	240,000	480,000	Feb.. 1901	.24
84	Empire State-Idaho, l. s.	Idaho	6,000,000	505,542	10	231,771	904,459	May . 1901	.10
85	Enterprise, g.	Colo..	500,000	500,000	1	.....	900,000	Sept.. 1898	.05
86	Fanny Rawlings, g.	Colo..	1,000,000	1,000,000	1	.....	20,000	Aug.. 1899	.01
87	Fern, g.	B. C..	200,000	200,000	1	.....	10,000	Jan... 1898	.05
88	Ferris-Haggarty, c.	Wyo.	1,000,000	1,000,000	1	.....	5,000	Mar.. 1899	.00½
89	Florence, s.	Mont.	2,500,000	400,000	5	.....	223,780	Mar.. 1901	.05
90	Frisco Con., l. s.	Idaho	2,500,000	500,000	5	.....	920,000	Nov.. 1899	.25
91	Frontino & Bolivia, c.	C'l'm	643,310	128,662	5	.....	1,109,066	Oct... 1899	.36
92	Galena, s. l. g.	Utah.	1,000,000	100,000	10	.....	71,000	Sept.. 1897	.05
93	Gemini.	Utah.	500,000	5,000	100	.....	700,000	Aug.. 1900	10.00
94	Gold Belt, g.	Colo..	1,250,000	1,250,000	1	.....	112,500	Aug.. 1900	.09
95	Gold Coin of Victor, g.	Colo..	1,000,000	1,000,000	1	120,000	720,000	Apr.. 1901	.03
96	Gold Deposit, g.	Colo..	500,000	500,000	1	.....	10,000	Mar.. 1900	.02
97	Gold & Globe, g.	Colo..	750,000	750,000	1	.....	51,625	July.. 1897	.00½
98	Gold King, g.	Colo..	1,000,000	936,850	1	28,106	206,107	Apr.. 1901	.03
99	Golden Cycle, g.	Colo..	1,000,000	200,000	5	30,000	408,500	Mar.. 1901	.05
100	Golden Eagle, g.	Colo..	500,000	500,000	1	5,000	30,000	Apr.. 1901	.01
101	Golden Fleece, g. s.	Colo..	600,000	600,000	1	.....	569,480	Feb.. 1897	.01
102	Golden Reward, g.	S. D..	1,000,000	100,000	10	.....	155,000	Feb.. 1898	.15
103	Grand Central, g. s.	Mex..	1,500,000	250,000	5	.....	840,000	Jan.. 1900	.48
104	Grand Central, g.	Utah.	250,000	250,000	1	.....	691,250	Nov.. 1900	.10
105	Grand Gulch, c.	Ariz..	250,000	240,000	1	.....	9,600	Apr.. 1900	.01
106	Grass Valley Expl.	Cal...	100,000	30,000	2	.....	30,000	Jan.. 1900	.25
107	Greater Gold Belt, g.	Colo..	5,000,000	3,800,000	1	.....	76,000	June. 1900	.02
108	Gwin, g.	Cal .	1,000,000	100,000	10	55,000	206,500	Apr.. 1901	.15
109	Hall, c. s.	B. C..	1,625,000	267,609	5	.....	220,000	May.. 1899	.24
110	Hecla, l. s.	Idaho	250,000	1,000,000	¼	.....	100,000	Dec.. 1900	.02
111	Hecla Con., s. l.	Mont.	1,500,000	30,000	50	15,000	2,235,000	Feb.. 1901	.50
112	Helena, g.	Ore..	1,000,000	1,000,000	1	20,000	70,000	Apr.. 1901	.01
113	Hidden Treasure, g.	Cal...	360,000	36,000	10	.....	457,452	Sept.. 1900	.10
114	Holy Terror, g.	S. D..	500,000	500,000	1	.....	172,000	Jan.. 1900	.01
115	Home, g. (Leadville).	Colo..	2,000,000	2,000,000	1	37,500	137,500	Apr.. 1901	.25
116	Homestake, g.	S. D..	21,000,000	210,000	100	420,000	9,823,750	Apr.. 1901	.50
117	Horn-Silver, g. s. c. z. l.	Utah.	10,000,000	400,000	25	.....	5,279,000	June. 1900	.05
118	Idaho, s. l.	B. C..	500,000	500,000	1	.....	292,000	Jan.. 1899	.05
119	Independence Con., g.	Colo..	2,500,000	2,500,000	1	181,375	281,375	Apr.. 1901	.04
120	Ingham Con., g.	Colo..	750,000	1,359,600	½	16,995	16,995	Apr.. 1901	.00¼
121	Iowa, g. s. l.	Colo..	1,666,667	1,666,667	1	16,667	153,500	Jan.. 1901	.01
122	Iron Mountain, g. s. l. i.	Mont.	5,000,000	500,000	10	.....	507,500	Apr... 1898	.02
123	Iron Silver.	Colo .	10,000,000	$500,000	$20	.....	$2,550,000	Dec.. 1900	.10
124	Isabella, g.	Colo..	2,250,000	2,250,000	1	$22,500	742,500	Mar.. 1901	.01
125	Jamison, g.	Cal...	3,900,000	390,000	10	.....	50,700	Apr... 1899	.10
126	Klondike Bonanza, g.	Klon.	750,000	52,750	5	.....	50,000	Aug.. 1899	.24
127	La Fortuna, g.	Ariz..	250,000	250,000	1	62,500	978,000	May . 1901	.05
128	Lake City, g.	Colo..	50,000	50,000	1	.....	3,875	May . 1900	.01
129	Last Chance, s. l.	B. C..	500,000	500,000	1	.....	45,000	Apr.. 1899	.05
130	Last Dollar, g.	Colo..	1,500,000	1,500,000	1	30,000	150,000	Feb.. 1901	.02
131	Le Roi, g.	B. Col	5,000,000	200,000	5	.....	1,305,000	Nov.. 1899	1.20
132	Lightner, g.	Cal...	125,000	102,255	1	7,669	17,892	Apr.. 1901	.05
133	Lillie, g.	Colo..	1,250,000	250,000	5	.....	349,183	Apr.. 1900	.05
134	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	60,000	1,850,000	Apr.. 1901	.05
135	Marian Con., g. s. z, l. i.	Colo..	5,000,000	500,000	10	.....	202,000	Sept.. 1899	.01
136	Mary McKinney, g.	Colo..	1,000,000	1,000,000	1	60,000	240,000	Apr.. 1901	.03
137	Midget, g.	Colo..	1,000,000	1,000,000	1	.....	120,000	Dec.. 1900	.15
138	Modoc, g. s.	Colo..	500,000	500,000	1	20,000	225,000	Apr.. 1901	.01
139	Mollie Gibson, s. l.	Colo..	5,000,000	1,000,000	5	.....	4,080,000	Jan.. 1895	.05
140	Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5	.....	453,700	Apr.. 1899	.12
141	Montana Ore Purchas'g.	Mont.	2,500,000	80,000	25	480,000	2,080,000	Apr.. 1901	3.00
142	Montreal, g.	Colo..	1,000,000	750,000	1	.....	7,500	Nov.. 1898	.01
143	Monument, g.	Colo..	300,000	300,000	1	3,000	21,124	Feb.. 1901	.01
144	Moon-Anchor, g.	Colo..	1,750,000	350,000	5	.....	261,000	Nov.. 1898	.07½
145	Moose, g.	Colo..	600,000	600,000	1	.....	186,000	Feb.. 1896	.01
146	Morning Star Drift, g.	Cal...	240,000	2,400	100	.....	854,400	Sept.. 1900	3.00
147	Morse, g.	Colo..	1,250,000	1,250,000	1	.....	215,650	May . 1899	.12
148	Moulton, g.	Mont.	2,000,000	400,000	5	.....	500,000	Oct... 1893	.05
149	Mountain, c.	Cal ..	6,250,000	250,000	25	420,000	2,793,750	Apr.. 1901	1.68
150	Mt. Diablo, s.	Nev..	5,000,000	50,000	100	.....	260,271	Jan.. 1900	.10
151	Mt. Rosa, g.	Colo..	1,000,000	1,000,000	1	.....	75,000	Dec.. 1899	.04
152	Mt. Shasta, g.	Cal...	100,000	20,000	5	.....	6,000	May . 1899	.30
153	Napa Con., q.	Cal ..	700,000	100,000	7	20,000	1,120,000	Apr.. 1901	.10
154	National Lead, com.	U. S..	15,000,000	149,054	100	.....	1,341,486	Mar.. 1900	1.00
155	National Lead, pf.	U. S..	15,000,000	149,040	100	260,820	10,840,100	Mar.. 1901	1.75
156	New Elkhorn, g.	Colo..	437,500	87,500	5	.....	1,325,000	June. 1898	.48
157	New Idria, q.	Cal...	500,000	100,000	5	40,000	290,000	Apr.. 1901	.20
158	New Jersey Zinc.	U. S..	10,000,000	100,000	100	400,000	3,200,000	Feb.. 1901	4.00
159	N. Y. & Hon Rosario, s. g.	C. A..	1,500,000	150,000	10	60,000	1,475,000	Mar.. 1901	.10
160	North Star, s. l.	B. C..	1,500,000	1,300,000	1	39,000	156,000	Mar.. 1901	.03
161	North Star, g.	Cal ..	5,000,000	250,000	10	.....	584,850	Nov.. 1899	.20
162	Nugget, g.	Colo..	1,000,000	991,000	1	19,820	74,820	Apr.. 1901	.01
163	Old Colony Zinc & Sm.	Mo...	1,100,000	69,909	10	17,477	85,753	Feb.. 1901	.25
164	Omega, g.	Colo..	1,500,000	1,200,000	1	.....	18,188	June. 1900	.01½
165	Ontario, s. l.	Utah.	15,000,000	150,000	100	.....	13,662,500	Apr.. 1900	.30
166	Original Empire, g.	Cal...	5,000,000	50,000	100	.....	530,000	Oct... 1899	1.00
167	Orphan Belle, g.	Colo..	1,000,000	1,000,000	1	.....	197,899	Dec.. 1899	.09
168	Osceola, c.	Mich.	2,500,000	95,900	25	.....	3,670,400	Dec.. 1900	3.00
169	Parrot, c.	Mont.	2,300,000	229,850	10	689,550	5,083,375	Apr.. 1901	1.50
170	Payne Con., s. l.	B. C..	3,000,000	2,600,000	1	78,000	1,438,000	Jan.. 1901	.03
171	Pennsylvania Con., g.	Cal...	5,150,000	51,500	100	.....	161,325	May.. 1900	.10
172	Pioneer, g.	Cal...	1,000,000	200,000	5	.....	62,500	Mar.. 1899	.12½
173	Plumas Eureka, g.	Cal ..	1,406,250	140,625	10	.....	2,797,544	Apr.. 1900	.60
174	Pointer, g.	Colo..	1,250,000	1,250,000	1	12,500	1,250,000	Mar.. 1901	.01
175	Portland, g.	Colo..	3,000,000	3,000,000	1	360,000	3,667,080	Apr.. 1901	.06
176	Princess, g.	Colo..	1,000,000	1,000,000	1	.....	55,000	Feb.. 1897	.00½
177	Queen Bess, s. l.	B. C..	500,000	100,000	5	.....	25,000	July.. 1899	.12½
178	Quicksilver, pref.	Cal...	4,300,000	43,000	100	21,500	1,888,411	May . 1901	.50
179	Quincy, c.	Mich.	2,500,000	100,000	25	300,000	12,270,000	Feb.. 1901	3.00
180	Rambler—Cariboo, s. l.	B. Col	1,250,000	1,250,000	1	.....	105,000	Apr.. 1900	.01
181	Reco, s. l.	B. C..	1,000,000	1,000,000	1	.....	287,500	Jan.. 1898	.10
182	Republic Con., g.	Wash	3,500,000	3,500,000	1	.....	382,500	Mar.. 1900	.01
183	Reward, g.	Cal...	1,000,000	100,000	10	.....	20,000	Aug.. 1899	.20
184	Rocco-Homestake, g. s.	Nev..	300,000	300,000	1	18,000	27,000	Apr.. 1901	.01½
185	Russell-Irwin, z.	Mo ...	250,000	25,000	10	.....	15,000	Oct... 1899	.10
186	Sacramento, g.	Utah.	5,000,000	1,000,000	5	.....	138,000	Oct... 1899	.00½
187	St. John del Rey, g.	Br'zil	3,000,000	425,482	5	.....	13,633,991	Dec.. 1900	.24
188	St. Joseph, l.	Mo...	3,000,000	250,000	10	37,500	3,347,000	Mar.. 1901	.15
189	Santa Rita, g.	Colo..	1,000,000	1,000,000	1	.....	4,000	July.. 1900	.02
190	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	475,000	3,925,000	May . 1901	.66⅔
191	Silver Shield, g.	Utah.	300,000	300,000	1	3,000	4,500	Feb.. 1901	.00½
192	Small Hopes, s.	Colo..	5,000,000	250,000	20	.....	3,325,000	Feb.. 1899	.10
193	Smuggler, s. l. z.	Colo..	1,000,000	1,000,000	1	120,000	1,850,000	Apr.. 1901	.03
194	Southern Boy, g.	Colo..	1,250,000	875,000	1	.....	17,500	May . 1900	.02
195	South Swansea, s. l.	Utah.	300,000	275,000	1	7,500	172,500	Mar.. 1901	.05
196	Squaw Mountain, g.	Colo..	2,000,000	2,000,000	1	.....	10,000	Nov.. 1899	.00½
197	Standard Con., g. s.	Cal...	2,000,000	178,394	10	35,678	3,999,780	May . 1901	.10
198	Standard, s. l.	Idaho	500,000	500,000	1	25,000	2,215,000	Feb.. 1900	.05
199	Stratton's Independ'ce.	Colo..	5,500,000	1,000,007	5	307,502	3,072,854	Apr.. 1901	.18¾
200	Swansea, s. l.	Utah.	500,000	100,000	5	25,000	301,500	May . 1901	.05
201	Tamarack, c.	Mich.	1,500,000	60,000	25	.....	7,290,000	Dec.. 1900	10.00
202	Tomboy, g.	Colo..	1,500,000	300,000	5	.....	956,000	Dec.. 1900	.24
203	Touraine, g.	Colo..	1,250,000	1,250,000	1	.....	87,500	Apr.. 1900	.07
204	Town Topics, g. c.	Colo..	1,000,000	1,000,000	1	5,000	5,000	May . 1901	.00½
205	Union, g.	Col...	1,250,000	1,250,000	1	.....	395,244	Sept.. 1900	.25
206	Union, z. l.	Kas..	500,000	500,000	1	20,000	55,000	Apr.. 1901	.01
207	United, z. l., pref.	Mo...	6,000,000	14,998	25	14,998	45,261	Apr.. 1901	.50
208	United Verde, c.	Ariz..	3,000,000	300,000	10	.....	7,861,180	Dec.. 1900	1.50
209	Utah, g.	Utah.	1,000,000	100,000	10	4,000	185,000	Apr.. 1901	.02
210	Utah Con., c.	Utah.	1,500,000	300,000	5	375,000	375,000	Apr.. 1901	1 25
211	Vindicator Con., g.	Colo..	1,500,000	1,500,000	1	72,500	566,000	Apr.. 1901	.03
212	War Eagle Con., g. s. c.	B. C..	2,000,000	1,750,000	1	.....	545,250	Feb.. 1900	.01½
213	What Cheer, z.	Mo...	225,000	22,500	10	.....	11,250	May.. 1900	.20½
214	Wolverine, c.	Mich.	1,500,000	60,000	25	.....	510,000	Oct... 1900	2.00
215	Yellow Aster, g.	Cal...	1,000,000	100,000	10	.....	459,410	Dec.. 1900	.10
216	Ymir, g.	B. C..	1,000,000	200,000	5	96,000	144,000	May . 1901	.24
217	Zoe, g.	Colo..	1,500,000	1,500,000	1	.....	7,500	Dec.. 1900	.00½
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This table is corrected up to May 1st. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT WHOLESALE PRICES

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls, Powd., F. FF. FFF	lb.	$0.08
Grains	"	.10
Corundum, N. C.	"	.07@.10
Chester, Mass.	"	.04½@.05
Crushed Steel, f. o. b. Pittsburg	"	.05½
Emery, Turkish flour, in kegs	"	.03¼
Grains, in kegs	"	.05@.05½
Naxos flour, in kegs	"	.03¼
Grains, in kegs	"	.05@.05½
Chester flour, in kegs.	"	.03½
Grains, in kegs	"	.05@.05½
Peekskill, f.o.b. Easton, Pa., flour, in kegs	"	.01¼
Grains, in kegs	"	.02½
Crude, ex-ship, N. Y.; Abbott (Turkey)	lg. ton	26.50@30.00
Afrodissia (Turkey)	"	23.00@24.00
Kuluk (Turkey)	"	22.00@24.00
Naxos (Greek) h. gr.	"	26.00
Pumice Stone, Am. powd.	lb.	.01⅞@.02
Italian, powdered	"	.01¼
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02½@.03
Lump, per quality	"	.05@.14
Rouge, per quality	"	.10@.30
Steel Emery, f.o.b. Pittsburg	"	.07
Acids—Acetic, 30% pure	100 lbs.	3.50
30% ch. pure	"	6.00
80% pure	"	7.50
Benzoic, English	oz.	.12
German	lb.	.40
Boracic, crystals	"	.10½@.11
Powdered	"	.11@.11½
Carbolic, crude, 60%	gal.	.27
Cryst, 37% drums	lb.	.23
Liquid, 95%	gal.	.45
Carbonic, liquid gas	lb.	.12½
Chromic, crude	"	.20
Chem. pure	"	.50
Hydrochloric, ch. pure.	"	.07
Hydrofluoric, 36%	"	.03
48%	"	.05
Best	"	.25
Nitric, chem. pure	"	.09
Sulphuric, chem. pure	"	.07
Sulphurous, liquid anhy.	"	.08
Tartaric, cryst	"	.28@.28¼
Powder	"	.28¾@.29
Alcohol—Grain	gal.	2.45
Refined wood, 95@97%	"	.60@.65
Purified	"	1.20@1.50
Alum—Lump	100 lbs.	1.75
Ground	"	1.85
Powdered	"	3.00
Chrome, com'l	"	2.75@3.00
Aluminum—Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	100 lbs.	2.60
Sulphate, pure	"	1.50@1.75
Com'l	"	1.15@1.25
Ammonia—Aqua, 16°	lb.	.03
18°	"	.03¼
20°	"	.03¾
26°	"	.05½
Ammonium—		
Bromide, pure	"	.52@.53
Carbonate lump	"	.08¼@.08½
Powdered	"	.09@.09¼
Muriate, gran.	"	.08
Lump	"	.09¼
Nitrate, white, pure (99%)	"	.10½
Phosphate, com'l	"	.10
Chem. pure	"	60
Antimony—		
Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¾
Best	"	.08½
Oxide, com'l white, 95%	"	.09½
Com'l white, 99%	"	.12
Com'l gray	"	.07
Sulphuret, com'l	"	.16
Arsenic—White	"	.04¼@.04½
Red	"	.07@.07⅞
Asphaltum—		
Ventura, Cal.	sh. ton	32.00
Cuban	lb.	.01½@.03½
Egyptian, crude	"	.05½@.06
Trinidad, refined	lg. ton	35.00
San Valentino (Italian)	"	16.00
Seyssel (French) mastic	sh. ton	21.00
Gilsonite, Utah, ordinary	lb.	.03
Select	"	.03¾
Barium—Carbonate, Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	26.00@29.00
Powdered, 80@90%	lb.	.01¾@.02
Chloride, com'l	100 lbs.	1.67½@1.76
Chem. pure cryst	lb.	.05
Nitrate, powdered	"	.06
Oxide, com'l, hyd. cryst	"	.18
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Sulphate	"	.02
Barytes—Am. Cr., No. 1	sh. ton	9.00
Crude, No. 2	"	8.00
Crude, No. 3	"	7.75
German, gray	"	14.50
Snow white	"	17.05
Bauxite—Ga. mines: 1st grade	lg. ton.	5.00
Second grade	"	4.2[illegible]@4.50
Ala., f.o.b., 1st grade	"	5.00
Second grade	"	4.25@4.50
Bismuth—Subnitrate	lb	1.75
Subcarbonate	"	1.95
Bitumen, "B"	"	.03½
"A"	"	.05
"A" and "B"	"	.04½
Bone Ash	lb.	$ .02¼@.02½
Borax	"	.07¼@.07½
Calcined	"	.25
Bromine	"	.40
Cadmium—Metallic	"	1.40
Sulphate	100 lbs.	2.00@2.50
Calcium—Acetate, gray	"	1.55
" brown	"	1.05
Carbide, ton lots, f. o. b. Niagara Falls, N.Y.	sh. ton	80.00
Carbonate, ppt.	lb.	.05
Chloride, com'l	100 lbs.	.75
Best	"	.80@1.00
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs.	bbl.	1.50@2.00
Belgium	"	1.95@2.20
English	"	2.45@2.55
German	"	2.30@2.70
"Rosendale," 300 lbs.	"	1.05
Sand cement, 400 lbs.	"	1.55@1.95
Slag cement, imported	"	1.65
Ceresine—		
Orange and Yellow	lb.	.13
White	"	.14
Chalk—Lump, bulk	sh. ton	2.60
Ppt. per quality	lb.	.03¾@.06
Chlorine—Liquid	"	.30
Water	"	.15
Chrome Ore—		
(50% ch.) ex ship, N. Y.	lg. ton	24.00
Sand, f.o.b. Baltimore	"	33.00
Bricks, f.o.b., Pittsburg, M		175.00
Clay, China—Am. com., ex-dock, N. Y.	lg ton	8.00
Am. best, ex-dock, N. Y.	"	9.00
English, common	"	12 00
Best grade	"	17 00
Fire Clay, ordinary	sh. ton	4.25
Best	"	6.00
Slip Clay	"	5.00
Coal Tar Pitch	gal.	.08
Cobalt—Carbonate	lb.	1.75
Nitrate	"	1.50
Oxide—Black	"	2.26@2.30
Gray	"	2.28@2.40
Smalt, blue ordinary	"	.10
Best	"	.20
Copperas	100 lbs.	.40@.45
Copper—Carbonate	lb.	.18
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide, com'l	"	.19
Cream of Tartar—Crys.	"	.19¼@.19½
Powdered	"	.19¾@.20
Cryolite	"	.06½
Explosives—		
Blasting powder, A. 25 lb. keg		2.50
Blasting powder, B.	"	1.25
"Rackarock," A.	lb.	.25
"Rackarock," B.	"	.18
Judson R.R. powder	"	.10
Dynamite (20% nitro-glycerine)	"	.13
(30% nitro-glycerine)	"	.14
(40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.16½
(60% nitro-glycerine)	"	.18
(75% nitro-glycerine)	"	.21
Glycerine for nitro (32 2-10° Be.)	"	.13@.13¼
Feldspar—Ground	sh. ton	8.00@9.00
Fluorspar—		
Am. lump, 1st grade	"	14.40
2d grade	"	13.90
Gravel & crushed, 1st g	"	13.40
2d grade	"	12.40
Ground, 1st grade	"	17.90
2d grade	"	16.50
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Refined lump	"	1.25
Graphite—Am. f. o. b. Providence, R.I. lump	sh. ton	8.00
Pulverized	"	30.00
German, lump	lb.	.01¼
Pulverized	"	.01½@.02
Ceylon, common	"	.03¾
Pulverized	"	.04@.08
Italian, pulv.	"	.01¼
Gypsum—Ground	sh. ton	8.00@8.50
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground, American, best	"	20.00
French	"	37.50
German	"	40.00
Iodine—Crude	100 lbs.	2.45
Iron—Muriate	lb.	.05
Nitrate, com'l	"	.01¼
True	"	.04
Oxide, pure copperas col	"	.05@.10
Purple-brown	"	.02
Venetian red	"	.01@.01½
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white	lb.	.07
Com'l, broken	"	.06½
Brown	"	.05½
Nitrate, com'l	"	.06½
" gran.	"	.8¼
Lime—Com., ab. 250 lbs	bbl.	.70
Finishing	"	.80
Magnesite—Greece.		
Crude (95%)	lg. ton	6.50@7.00
Calcined	sh.ton	14.00@15.00
Bricks	M.	170.00
Am. Bricks, f o.b., Pittsburg	"	175.00
Magnesium—		
Carbonate, light, fine pd	lb.	.03¾
Blocks	"	.06@.09
Magnesium—		
Chloride, com'l	lb.	$ .01¾
Fused	"	.20
Nitrate	"	0.60
Sulphate	100 lbs.	.90
Manganese—Crude-pow'd 70@75% binoxide	lb.	.01¼@.01½
Crude, pow'd 75@85% binoxide	"	.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.02¾@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50% Foreign	unit	.26¾
Domestic	"	.30
Marble—		
Flour	sh. ton	6.00@7.00
Mercury—		
Bichloride	lb.	.77
Mica—N. Y. gr'nd, coarse	"	.03@.04
Fine	"	.04@.05
Sheets, N. C., 2x4 in.	"	.30
3x3 in.	"	.80
3x4 in.	"	1.50
4x4 in.	"	2.00
6x6 in.	"	3.00
Scrap, f.o.b., Dillsboro, N. C.	sh. ton.	25.00
Mineral Wool—		
Slag, ordinary	sh. ton	19.00
Selected	"	25.00
Rock, ordinary	"	32.00
Selected	"	40.00
Monazite—92%	"	140.00
Nickel—		
Oxide, No. 1	lb.	1.00
No. 2	"	.60
Sulphate	"	.20@.21
Oils—Black, reduced 29 gr.:		
25@30 cold test	gal.	.09¾@.10¼
15, cold test	"	.10¾@.11¼
Zero	"	.11¾@.12¾
Summer	"	.09¼@.09¾
Cylinder, dark steam ref	"	.08¾@.10¾
Dark filtered	"	.11¾@.16¼
Light filtered	"	.14¾@.17¾
Extra cold test	"	.21¾@.26¾
Gasoline, 86°@90°	"	.16@.21
Naphtha, crude 68@72°	bbl.	9.60
"Stove"	gal.	.12
Linseed, domestic raw	"	.57@.61
Boiled	"	.63
Calcutta, raw	"	.85
Ozokerite	lb.	.11½
Paints and Colors—		
Chrome green, common	"	.05
Pure	"	.16
Yellow, common	"	.10¼
Best	"	.25
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack, com'l	lb.	.04¼
Refined	"	.07
Litharge, Am. powd.	"	.05½@.06
English flake	"	.07½@.08
Glassmakers	"	.07½
Metallic, brown	sh. ton	19.00
Red	"	16.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾
French, washed	"	.01¼@.02
Orange mineral, Am.	"	.07¾@.08
Foreign, as to make	"	.08@.11
Paris green, pure, bulk	"	.12
Red lead, American	"	.05¾
Foreign	"	.07¼@.08¼
Shellac, "D. C."	"	.30
Native	"	.15
Turpentine, spirits	gal.	.36
Ultramarine, best	lb.	.25
Vermilion, Amer. lead, Quicksilver, bulk	"	.10@.14
	"	.70
Foreign	"	.80@1.00
White lead, Am., dry	"	.05
American, in oil	"	.05¾
Foreign, in oil	"	.07¾@.09¾
Whiting, common	100 lbs.	.40
Gilders	"	.54
Zinc white, Am., ex. dry	lb.	.04¾@.04¾
American, red seal	"	.06½
Green seal	"	.07
Foreign, red seal, dry	"	.05¼@.05¾
Green seal, dry	"	.07¼@.09¾
Potash—Caustic, ord.	"	.04½@.05
Elect. (90%)	"	.06½
Potassium—		
Bicarbonate cryst.	"	.08¼
Powdered or gran.	"	.14
Bichromate, Am.	"	.08¼
Scotch	"	.08½
Carbonate, hydrated	"	.04½
Calcined	"	.04
Chromate	"	.35
Cyanide (98@99%)	"	.25
Iodide, bulk	"	2.30
Permanganate, pure cr.	"	.11@.11¼
Prussiate, yellow	"	.14⅝@.15
Red	"	.37
Silicate	"	.06
Sulphide, com'l	"	.10
Quartz—(See Silica).		
Rosin—		
Com. strained (280 lbs.)	bbl.	1.60
Best strained	"	2.80
Medium	"	1.80
Salt—N Y com fine	sh. ton	2.00
N. Y. agricultural	"	1.50
Saltpeter—		
Crude	100 lbs.	3.35
Refined	"	4.25
Silica—Best foreign	lg. ton	10 00@11.00
Ground quartz, ord.	sh. ton	6.00@8.00
Best	"	12,00@13.00
Lump quartz	"	2.50@4.00
Glass sand	"	2.75
Silicon—Carbide	lb.	.05
Silver—	Cust. Meas.	Price.
Chloride	oz.	$0.65
Nitrate	"	.39½
Oxide	"	.85@1.10
Slate—Ground, black	sh. ton	7.50@8.75
Ground, red and olive	"	20.00
Sodium—Acetate, com'l	lb.	.04¼
Bichromate	"	.08¼
Chlorate, com'l	"	.09@.09¾
Hyposulphite, Am.	100 lbs.	1.80
German	"	2.00
Nitrite, 96@98%	lb.	.08
Peroxide	"	.45
Phosphate	"	.02½
Prussiate	"	.12½
Silicate, conc	"	.05
com'l	"	.01
Sulphate, com'l	100 lbs.	.70
Gran., puri'd	lb.	.03
Sulphide	"	.01¾
Sulphite crystals	"	.02½
Tungstate, com'l	"	.35
Strontium—Nitrate	"	.08
Sulphur—Roll	100 lbs.	1.75
Flour	"	1.80
Flowers, sublimed	"	2.05
Talc—N. C., 1st grade	sh. ton	13.75
N. Y., Fibrous	"	8.00@9.00
French, best	100 lbs.	1.25
Italian, best	"	1.62½
Tar—Regular	bbl.	1.90
Oil barrels	"	3.75
Tin—Bichloride	lb.	.09½@.10
Crystals	"	.20
Muriate, 36°	"	.09
52°	"	.15
Oxide, white, ch. pure	"	.40
Uranium—Oxide	"	2.25@3.00
Zinc—Metallic, ch. pure	"	.09@.10
Carbonate	"	.15
Chloride	"	.05
Dust	"	.06¼@.06½
Sulphate	"	.02@.02⅛

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5.71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Nitrate (N Y.)	oz.	1.50
Boron—Amorphous, pure	grm.	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Cadmium—Sticks	kg.	1.55
Sheets	"	2.83
Granulated	"	2.38
Powder	"	1.90
Calcium—Elect	grm.	4.28
Cerium—Fused	"	2.02
Nitrate (N. Y.)	oz.	1.25
Chromium—Fused, Elect.	kg.	5.95
Pure powder 95%	"	1.79
Chem. pure cryst	grm.	.20
Cobalt—(98@99%)	kg.	6.66@8.33
Pure	"	30.94
Didymium—Powd.	grm.	3.81
Fused, Elect.	"	5.47
Nitrate (N. Y.)	oz.	2.50
Erbium	grm.	3.09
Nitrate (N. Y.)	oz.	2.50
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	oz.	2.75
Indium	grm.	3.57
Iridium—Fused	"	1.07
Powder	"	.95
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	oz.	2.25
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Magnesium—Ingot	kg.	6.19
In wire or ribbon	"	9.99
Powdered	"	5.95@7.14
Sheet	"	9.04
Molybdenum—Fused	grm.	.15
Powder, 95%	kg.	2.62
Niobium	grm.	3.81
Osmium	"	.94
Palladium—Wire	"	.86
Sponge	"	62
Potassium—In balls	kg.	17.85
Rhodium	grm.	2.38
Rubidium—Pure	"	4.76
Ruthenium—Powder	"	2.38
Rutile—Crude	kg.	.43
Selenium—Com'l powder	"	26 28
Sublimed powder	"	35.70
Sticks	"	28.56
Silicium—Com'l	"	28.56
Chem. pure crystals	"	59.50
Amorphous	"	27.36
Sodium (N. Y.)	lb.	.65
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks.	kg.	107.00
Chem. pure powder	"	83.30
Thallium	"	26.18
Thorium—Nitrate 49@50% (N. Y.)	lb.	5.00
Titanium	kg.	47.60
Uranium	"	190.40
Nitrate (N. Y.)	oz.	.25
Wolfram—Fused, elect.	kg.	238.00
Powder, 95@98%	"	1.43
Chem. pure powder	"	6.43
Yttrium	grm.	3.33
Nitrate (N. Y.)	oz.	2.75
Zirconium—Com'l	kg.	119.00
Nitrate (N. Y.)	oz.	.75

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to April 10. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Reviews.